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Articles

Volume 2 Issue 1 April 2023

Message from the Editor-in-Chief

I am pleased to introduce the release of Volume 2, Issue 1 of the *Dilla Journal of Education*, a peer-reviewed bi-annual publication of Dilla University. This issue presents a diverse collection of articles that delve into critical aspects of education within Ethiopia.

On behalf of the editorial board, I invite you to explore the research presented, which examines topics such as principals' leadership styles and their impact on teacher organizational commitment, predictors of risky sexual behavior among trainee teachers, the challenges and practices of teacher performance appraisal in primary schools, the repercussions of higher education reform on mathematics students, and perspectives on principal power in secondary schools. It is my hope that this issue provides valuable insights, stimulates further discussion, and encourages continued research within the Ethiopian education landscape. I encourage you to engage with these articles and contribute to the ongoing dialogue surrounding educational improvement.

Finally, I extend my sincere gratitude to the authors for contributing their valuable research, to the reviewers for their rigorous and insightful feedback, and to the dedicated members of the editorial team for their tireless efforts in bringing this issue to fruition. Your commitment to scholarly excellence is highly appreciated.

Daniel Gebretsadik (PhD, Associate Professor)

Editor-in-Chief

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Principals' Leadership Styles and Secondary School Teachers' Organizational Commitment in Ethiopia

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Abstract

This study aimed to examine the perceived relationship between principals' leadership styles and secondary school teachers' organizational commitment in Ethiopia. A descriptive survey research design was employed. A total of 287 sample teachers were selected using a multistage sampling technique. Data were collected using two standardized questionnaires, namely Bass & Avolio's (1997) Multifactor Leadership Questionnaire (MLQ) and Allen & Meyer's (1990) Organizational Commitment Questionnaire (OCQ). The data were analyzed using both descriptive and inferential statistics. The results revealed that the transactional leadership style was predominantly practiced in Ethiopian secondary schools. On the other hand, the findings showed that transactional and transformational leadership styles had positive and statistically significant relationships with the organizational commitment dimensions. Nonetheless, the laissez-faire leadership style was found to be negatively related to teachers' normative commitment. Finally, results were discussed, and recommendations were forwarded to improve teachers' commitment.

1 Introduction

1.1 Background

Organizations all around the world are still up in the air, out of objectives. In accomplishing these objectives, the job of employees couldn't possibly be more significant (Gberevbie, 2017). This is mostly because institutions, regardless of the various resources they have (money, land, innovation, time, and materials), are unable to achieve their specified goals without the involvement of their human resources.

However, it has been demonstrated that a variety of factors, including inventive compensation plans, access to representative benefits, a pleasant workplace, an organization's guiding principles, opportunities for professional success, recognition, and employee commitment, among others, are responsible for enhancing teachers' organizational responsibility (Armstrong & Taylor, 2014; Popli & Rizvi, 2016). Furthermore, studies have shown that the primary component accountable for instructors' organizational responsibility is leadership, which is linked to the pioneer's approach (Trottier *et al*., 2008; Yasir *et al*., 2016).

A school principal's responsibility is to ensure that the environment for learning and teaching is inspiring. The principal of the school works to alter the structures and routines of education compellingly and constructively. Working with teachers and guiding them to improve the educational and learning processes are both aspects of educational leadership. To achieve learning results, high-caliber leadership and instruction are essential.

Gracia-Spirits *et al*. (2008) claim educational leadership has a favorable and intentional impact on the teaching-learning process. The seamless and efficient operation of the educational framework is

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a prime example of exceptional leadership on the part of the school administration. The school principal's leadership style shows how they relate to their teachers. Every principal behaves and collaborates with his or her teachers uniquely.

The school authorities have been criticized for adopting an authoritarian style of leadership, which frequently elicits unfavorable reactions from their teachers and impedes amicability between the two (Akinbode & Fagbohunde, 2012). Staff demotivation and the breakdown of teachers' authoritative roles are two consequences of these leadership philosophies. Because of this, teachers are alienated from the organizations and have no quick opportunity to leave them for unknown reasons (Nasurdin *et al.*, 2014).

Significantly perceptive thought has been given to the relationship between teaching responsibilities and leadership philosophies. The majority of studies on school leadership have identified distinct leadership philosophies that leaders use to guide educational institutions (Kelly & MacDonald, 2019; Sudha *et al.*, 2016; Yukl, 2013). The most comprehensive type of leadership style at the moment is Full-Range Leadership (FRL) (transformational, transactional, and *laissez-faire*) (Abasilim, 2014; Rehman *et al.*, 2012; Rukmani *et al.*, 2010). Additionally, representatives in organizations exhibit three important types of commitment (affective, normative, and continuance) (Othman *et al.*, 2013).

Furthermore, regardless of the type of workplace, the majority of studies examining the relationship between various leadership philosophies (transformational, transactional, and *laissez-faire*) and teachers' organizational commitment have found that the former have positive effects on commitment while the latter have negative effects (Abasilim *et al.*, 2018a; Abasilim *et al.*, 2018b; Dariush *et al.*, 2016; Fasola *et al.*, 2013; Garg & Ramjee, 2013; Wiza & Hlanganipai, 2014).

To summarize, the leadership style of school leaders and different partners is the core of authoritative responsibility at any level. School principals might follow different leadership styles, and teachers' authoritative responsibilities vary in like manner. In this review, due consideration was given to the full range of leadership styles (transactional, transformational, and *laissez-faire*). Focusing on the relationship between principal leadership styles and how they affect Ethiopian secondary school teachers' organizational commitment is manageable in this regard. Henceforth, it is significant for clarifying the issues at schools and tracking down answers for them. The study has also made an effort to look into the link between the principals' leadership styles used in their schools and the organizational commitment of the teachers.

1.2 Statement of the Problem

Schools are the main organizations in the instructional framework. A central figure who has a significant degree of inspiration is expected to satisfy the objectives of the learning process. Researchers in organizational commitment show that principals play an extraordinary role in raising the responsibility of teachers (Aydin *et al.*, 2013). Principals perceive teachers' viability and proficiency as their top priorities when it comes to achieving school goals. The principal is responsible for everything that occurs in the school, and the way he or she works with the staff and interacts with them affects how satisfied the teachers are with their work and how they feel about their commitments to the school, to their profession, and teaching.

Moreover, a proficient and talented teacher is expected to accomplish school objectives. Be that as it may, how to use and prepare quality teachers matters. Enlisting, choosing, arranging, and setting representatives are, by all accounts, not the only basic issues for the accomplishment of school objectives. To use such assets, leadership style is the essential and most significant element for the ideal usage of the labor force, which is an impression of organizational responsibility.

As a result of different investigations by researchers, organizational commitment (OC) has crucial consequences for teachers and schools. According to Aydin *et al.* (2013), schools are moving toward structures in which rank denotes responsibility rather than authority, and the supervisor's goal is to convince rather than command. As a result, principals need to persuade their subordinates, colleagues, and superiors to support their goals and urge them to follow through with their decisions to be effective. Similarly, the organization must understand what factors have a significant impact on teacher dedication.

Furthermore, for a school to successfully implement plans, establish a competitive edge, and optimize human resources, leadership styles that foster teacher dedication are critical. As a result, if the state of commitment is the functional product of the leadership style in existence, committed teachers are a crucial success factor for schools to reach their targeted goals. Leadership styles are also important for the school's effectiveness since they motivate teachers and communicate the school's strategic goals and policies (Keskes, 2014; Kelly & MacDonald, 2019).

Ethiopian secondary schools put a strong emphasis on delivering top-notch instruction, research, and development. The organizational culture, teacher-motivation strategies, and rules and regulations of these institutions are distinctive. A deeper understanding of the relationship between leadership styles and organizational commitment is required to develop a leadership style that would encourage and strengthen organizational commitment at the school level.

3,739 secondary schools in Ethiopia offer instruction. The main issues that secondary schools in the nation have had to deal with are low student academic achievement, high teacher turnover, a lack of motivation and commitment on the part of teachers, a lack of communication between school principals and the administrative and teaching staff, and high rates of dropout and repetition.

As a result, this article tried to address the following crucial questions:

1. What type of leadership style is most common in Ethiopian secondary schools?

2. How committed are secondary school teachers in Ethiopia?

3. How much do leadership styles influence teachers' commitment in Ethiopian secondary schools?

2 Literature Review

Teachers may be forced to resign as a result of their superiors' ineffective leadership approaches. It was discovered that transformational leadership has a strong and significant impact on teachers' organizational commitment to change and reform. Transformational leadership styles in school principals have a good impact on their instructors and organizational dedication. Linking new educational policies and teacher behavior will require the expertise of a trained and experienced school principal. Every successful school requires a strong principal who can increase teacher dedication and job happiness (Mowday, 1998; FDRE, 1994; Mottoh, 2015).

By highlighting the relationship between teachers' efforts and goal achievement, promoting values that are related to goal achievement, and increasing personal commitment on the part of both followers and leaders to the organization's ultimate common vision, mission, and goals, transformational leaders have a strong ability to influence organizational commitment. They can influence their followers' organizational commitment by encouraging critical thinking through creative approaches, involving them in decision-making processes, and inspiring loyalty. They can also do this by recognizing and appreciating the unique needs of each follower to help them reach their full potential (Keskes, 2014).

Transactional leadership, on the other hand, has no meaningful association with organizational commitment. According to Hayward *et al.* (2004), there is no association between transactional leadership and affective, normative, or continuous commitment. Furthermore, their findings show that transformational leadership styles are more likely to inspire subordinate commitment than transactional and *laissez-faire* leadership styles. Organizational commitment and transformational leadership are closely related in this way. Empirical and meta-analytic studies have shown that those who follow transformational leaders are more likely to be committed to their organizations and exhibit fewer withdrawal tendencies (Yukl, 2013). The commitment of teachers has a positive impact on student learning outcomes and school effectiveness. Researchers in business and other fields have developed a theory of organizational commitment, and they have identified three types of it: affective, normative, and continuance. However, Singh and Billinnsgley (1998) defined three categories of teacher commitment: teaching commitment, student commitment, and institution commitment. Teachers who are dedicated to the organization's ideals work tirelessly to achieve them. They are more zealous and enthusiastic at work. Teachers' tardiness, absenteeism, and turnover are all symptoms of a low level of dedication on their part. The principal's leadership style has a big impact on how the school is run overall, especially on how committed the teachers are to the group.

Conceptual Framework

The Full Range Leadership (FRL) and Organizational Commitment (OC) models created by Bass and Avolio (1985) and Meyer and Allen (1990), respectively, were synchronized and modified for this study. With the use of the MLQ and OCQ, the FRL and organizational commitment (OC) were researched to assess the effect of principals' leadership styles on teachers' commitment in Ethiopian secondary schools. The link between FRLS and OC dimensions is depicted in the diagram.

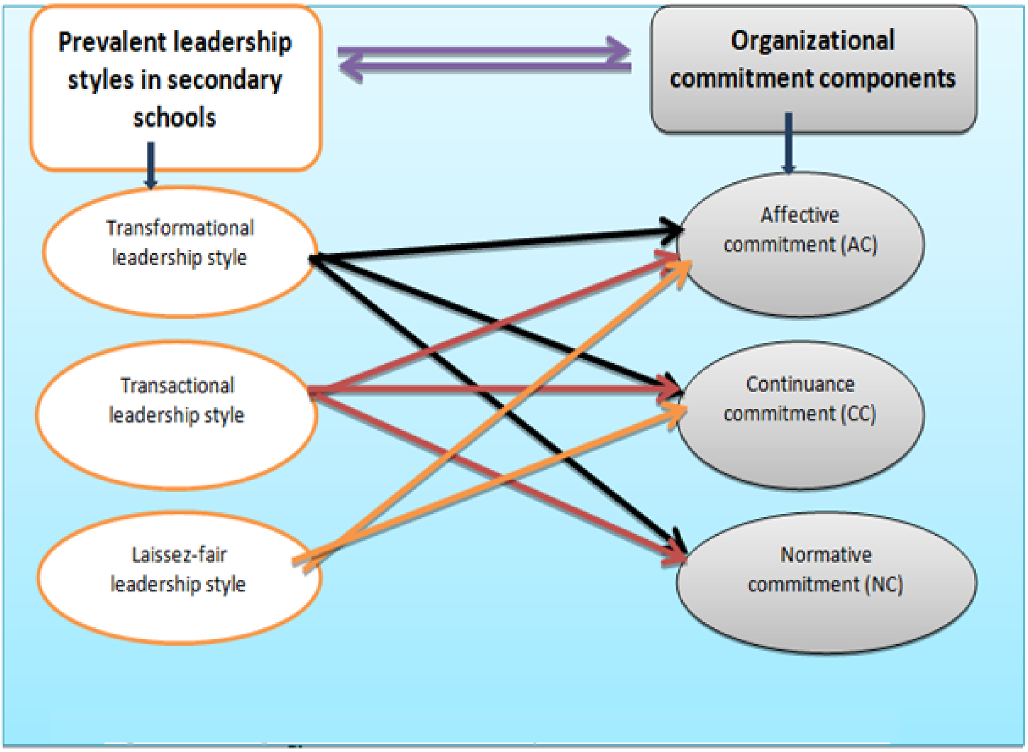

Figure 1: Conceptual framework of the study

3 Research Design and Method

3.1 Research design

This study employed a descriptive survey research design. Descriptive survey research design is concerned with finding what is and is meant to describe a behavior or type of subject rather than looking for specific relationships among two or more variables (Creswell, 2007; Creswell & Plan Clark, 2011). Williams (2007) also defines a descriptive research design as a research strategy that seeks to examine the situation as it exists in its current state. Furthermore, descriptive research design deals with issues related to current phenomena in terms of conditions, practices, beliefs, processes, relationships, or trends (Orodho, 2005; Salaria, 2012). In the context of this study, a survey was used for collecting, recording, and analyzing data obtained through the questionnaires, which sought to describe and determine Ethiopian secondary teachers' perceptions of the effects of leadership styles on their organizational commitment.

3.2 Target Population

The term "population" refers to all research participants or units of interest who share particular traits (Silverman, 2005). The study comprises five regions (Amhara, Oromia, SNNPR, Gambela, and Somali) out of nine regional states and one city administration (Addis Ababa) out of two city administrations by using a simple random sampling technique. From each region and city administration, one province/*zone* was selected, and from each province/*zone*, one district/*woreda*, and from each district/*woreda*, one high school was selected by using a multistage sampling technique.

3.3 Sampling Procedure

The process of picking a sample from a specific population to correctly represent that population is known as sampling (Burns, 2010). Stratified random sampling was used to select 287 secondary school teachers in the target schools using a sample size determination formula:

$n = \frac{N}{e^2(N-1)+1}$

Where N is the total number of the teacher and e^2 is the probability of adjusting error occurrence when taking the sample.

Table 1: Sample size of the study

Secondary schools	**X1**	**X2**	**X3**	**X4**	**X5**	**X6**	**Total**
Number of teachers in each school	109	242	139	156	184	126	956
Sample size of teachers selected from each school	32	73	42	47	55	38	287

3.4 Data Collection

To acquire relevant data for the study, the researcher used two standardized questionnaires. The leadership style was assessed using the Multifactor Leadership Questionnaire (MLQ) developed by Bass and Avolio (1997) and the Organizational Commitment Questionnaire (OCQ) developed by Allen and Meyer (1990). To determine the validity and reliability of the data-gathering instruments, a pilot study was carried out. The pilot was carried out at Dilla Secondary School in Gedeo province/zone, Southern Nations Nationalities and People Regional State (SNNPR) of Ethiopia. Accordingly, the reliability of MLQ was tested to be 0.83 of the Cronbach alpha value, which is considered capable of coming up with valid and reliable results for the study.

On the other hand, the validity of the tool was made valid using experts' opinions and previous research results (Northouse, 2013). Besides, Allen and Meyer's (1990) Organizational Commitment Questionnaire (OCQ), which consists of the three major components of commitment, such as affective, continuance, and normative, was used to measure teachers' organizational commitment for this study. In this instance, the pilot study found that each organizational commitment questionnaire (OCQ) subscale's internal reliability was greater than 0.70, which is generally regarded as indicating high levels of internal consistency reliability (Griffith, 2015).

3.5 Data analysis techniques

The quantitative data was analyzed using descriptive and inferential statistics in the Statistical Package for Social Sciences (SPSS) Version 21. The mean and standard deviation in descriptive statistics were computed. On the other hand, the Pearson correlation was employed to determine the correlation between teachers' organizational commitment and principals' leadership styles.

4 Results

4.1 Leadership Styles in Secondary Schools

Table 2 shows descriptive data for the five transformational leadership variables, three transactional leadership aspects, and one *laissez-faire* element that respondents stated.

According to Table 2, the mean values for each of the transformational leadership variables ranged from 2.90 to 22.32; meanwhile, the mean values for transactional leadership components ranged from 2.68 to 1.64. However, the mean value for *laissez-faire* leadership was 1.08.

Table 2: Mean scores for the full range components of leadership styles

	Full range leadership	Teacher respondents		
		N	Mean	SD
1	**Transformational Leadership**	**287**	**2.54**	**1.22**
	Idealized influence	287	2.33	1.34
	Idealized behavior	287	2.32	1.29
	Inspirational motivation	287	2.90	1.06
	Intellectual stimulation	287	2.62	1.16
	Individual consideration	287	2.54	1.26
2	**Transactional leadership**	**287**	**2.68**	**1.26**
	Contingent reward	287	2.68	1.17
	Management by exception active	287	2.63	1.17
	Management by exception passive	287	1.64	1.44
3	***Laissez fair***	**287**	**1.08**	**1.31**

4.2 Organizational Commitments in Secondary Schools

Table 3 shows the mean scores of the three dimensions of organizational commitment as perceived by the teachers.

According to the aforementioned findings, affective commitment had the lowest mean score of 2.38 and normative commitment had the highest mean score of 2.62.

As a result, affective commitment is the least prevalent type of organizational commitment among secondary school teachers in the present study.

Table 3: Mean Scores on the Dimensions of Organizational Commitment

Dimensions	N	Mean	SD
Affective commitment	287	2.38	1.29
Continuance commitment	287	2.47	1.26
Normative commitment	287	2.62	1.15

4.3 The Relationship between Principals' Leadership Styles and Teachers' Organizational Commitment

A Pearson correlation was used to examine the relationship between the three leadership philosophies and the three organizational commitment components. The information as evaluated by the teacher respondents is shown in Table 4, which also shows their leadership styles and organizational commitments in the context of the schools.

According to Table 4, transformational leadership has a somewhat positive statistical correlation with the three organizational commitment characteristics. The Pearson correlation coefficients (r) for affective commitment, continuance commitment, and normative commitment were 354, 400, and 407, respectively. Similarly, the transactional leadership style and organizational commitment of teachers were positively and significantly related. Accordingly, the Pearson coefficients (r) for the affective, continuance, and normative commitments were 454, 472, and 559, respectively. This shows that transactional leadership and organization commitment are moderately related to affective and continuance commitments. The normative commitment of teachers and transactional leadership, however, was comparatively stronger than affective and continuance commitment.

The findings in Table 4 showed an inverse correlation between the style and teachers' normative commitment, as well as a significant statistical association between the *laissez-faire* leadership style and affective commitment with poor strength. On the other hand, there was no correlation between the *laissez-faire* leadership style and teachers' affective or continuance commitments.

Table 4: Pearson correlation matrix between principals' leadership styles and teachers' commitment dimensions

Leadership styles	**Organizational Commitment**		
	Affective	Continuance	Normative
Transformational	.354**	.400**	.407**
Transactional	.454**	.472**	.559**
Laissez- faire	0.021	-0.049	-.101*

* Correlation is significant at the $p < 0.05$ level (2-tailed).
** Correlation is significant at the $p < 0.01$ level (2-tailed) .

In sum, the results in Table 4 showed that the three leadership styles had significant relationships with teachers' organizational commitment. Though the strength of the correlation was weak and moderate, the link between *laissez-faire* leadership and normative commitment was also in a reverse direction.

5 Discussion

Concerning the aggregate data scores for transformational components, they were all below what Bass and Avolio (1997) consider "optimal" levels for an effective leadership style, although transactional factors were nearly compatible. Transformational variables should have a mean of 3.0 or higher in the suggested scores for the most effective leaders. The mean transformational scores ranged from 2.90 to 1.08.

Bass and Avolio (1997) suggested a mean score of 2 to 3 for all the elements when it came to the transactional leadership style. As a result, the mean score for the sample data in this study is 2.68, which is close to the suggested number. Management-by-exception-active received a score of 2.68, while contingent reward received a score of 2.63. The stated values for *laissez-faire* and management-by-exception passive are both less than 2.00, while the mean scores for this study vary from 1.64 to 1.08.

Respondents said their principals did not exhibit the "optimal" levels of transformational leadership style, according to the patterns of scores described above. These behaviors include promoting pride, inspiring a shared purpose, speaking upbeat, fostering inventiveness, and placing a strong emphasis on mentoring.

The average contingent reward score, on the other hand, shows that teachers believed their principals performed a better-than-average job of expressing expectations and recognizing achievements. Management-by-exception-active mean value supports this, demonstrating that teachers believe their principals take prompt corrective action when mistakes are made. Additionally, the mean ratings for management-by-exception (passive) and *laissez-faire* management indicate that several teachers felt their direct district education heads did not take corrective action.

Consequently, teachers felt that transactional leadership (M = 2.68) was slightly more practiced than transformational (M = 2.54) and *laissez-faire* (M = 1.08) leadership styles. This contradicts the finding by Trottier *et al.* (2008) that the general concept of leadership effectiveness favors transformational leadership slightly more.

When describing how to use their Organizational Commitment Questionnaire (OCQ) measures, Allen and Meyer (1990) make no mention of average, necessary, ideal, or expected means for affective, continuance, and normative commitment. Instead, Brockner *et al.* (1992), Shore and Wayne (1993), Hunt and Morgan (1994), and Meyer *et al.*

(2004) looked into the pattern of those findings, the level of influence they had, and the relationship between the various levels of organizational commitment and the outcomes under study. Many of them argued that the required pattern should be ordered in the following sequence, going from highest to lowest scores: affective, normative, and continuance commitment.

Accordingly, the findings of this study showed that the pattern for mean scores differs from the above-mentioned ones, with normative commitment receiving the greatest score, followed by continuance commitment, and finally affective commitment receiving the lowest score. This suggests that teachers have a low level of affective commitment to their organizations, despite the fact that they perceive themselves to be members of these organizations. The highest mean of normative commitment, on the other hand, indicates that teachers believe principals have devoted most often to mentoring, teaching, and showing the ropes compared to other organizational commitment criteria.

Additionally, the leadership style is related to how teachers perceive their continual commitment to the school and the need to remain there. Continuance commitment is more likely to be linked to transferable skills, education, retirement funds, status, and job security, as well as other career options (Allen & Meyer, 1990; Hunt & Morgan, 1994; Meyer *et al.*, 2004). The results of this study, however, contradict those of Lo *et al.* (2010), who found that transformational leadership was a greater predictor of affective, continuation, and normative commitment than transactional leadership.

In psychological terms, transformational school leaders have strong favorable associations with teacher dedication, according to this study. This is consistent with the findings of Lo *et al.* (2010), who discovered a stronger correlation between organizational commitment traits and a transformational leadership style. Given that transformational leadership is generally related to emotional components, it's no surprise that affective, continuous, and normative teacher commitment are the highest in transformational leadership. As a result, it can be concluded that Ethiopian secondary schools have a substantial association between teacher dedication and transformative leadership styles. A transformational leader is more likely to win followers' loyalty to the organization when they support them in achieving their full potential and meeting their higher-order expectations (Bass, 1997).

The relationship between transactional leadership style and normative commitment is favorable, demonstrating that awards, identifying issues, and positive reinforcement are related to how teachers feel about the school's need to retain them (Bass & Avolio, 1993). This link also shows that principals have a significant influence on teachers' moral ties to the school and feelings of duty (Allen & Meyer, 1990; Shukla, 2014).

Similar to this, the strong association between transactional leadership style and affective and continuance commitment points to a link between certain styles and how teachers perceive their need for and desire to stay with the organization. These behaviors include bringing issues to attention, exchanging rewards for meeting objectives, and delaying action until problems become serious. These personality traits are more often associated with successful outcomes (Allen & Meyer, 1990; Bass & Avolio, 1993; Shann, 2001).

The results of this study match those of Buciuniene and Kudiene (2008), who discovered a solid and advantageous relationship between a transactional leadership style and affective, continual, and normative commitment. It nevertheless goes against the authors' conclusions regarding affective and normative commitment. Additionally, the results supported those of Ponnu and Tennakoon (2009) and Lo *et al.* (2010), who discovered a favorable relationship between transactional leadership and teachers' organizational commitment.

The finding by Marmaya *et al.* (2011) that transactional leadership style is related to emotional commitment is supported by the strong positive relationship between transactional leadership style and normative commitment. Buciuniene and Kudiene's (2008) findings, which revealed that transactional leadership had a beneficial association with affective and normative commitments based on empirical evidence, are in conflict with the results of the current study.

Finally, it may be concluded that affective and continuance commitments are unaffected by *laissez-faire* leadership style because there is little evidence linking these commitments to it. As a result, in secondary schools, affective teachers' commitment is adversely correlated with attributes including ignoring challenges, showing indifference, and ignoring accomplishments.

Laissez-faire leadership, on the other hand, has a statistically significant association with affective or long-term commitments. These nearly non-existent connections show that leadership characteristics such as disregarding difficulties, seeming uninvolved, displaying indifference, and neglecting accomplishments are unrelated to how teachers feel about the need to stay in secondary schools.

Laissez-faire leadership, which is considered to have a non-intervening nature, had negative implications for normative teachers' commitment but none for others. The findings are in line with previous research, which shows that *laissez-faire* leadership has little effect on emotional or continuation commitments while having a considerable negative impact on normative commitment (Buciuniene & Kudiene, 2008). Similarly, the study revealed a lack of relationships between *laissez-faire* leadership styles and teachers' affective and continuation commitments (Popli & Rizvi, 2016).

6 Conclusion

The outcome of the leadership style and organizational commitment article is explained in this section. Transformational and transactional leadership styles are used to evaluate leaders. This necessitates a change in leadership style to promote teachers' organizational commitment. The results imply that leadership could support organizational commitment through the use of transformational and transactional leadership styles; the first dimension of the independent variable, where the transformational style has a positive relationship with organizational commitment; and the second dimension, where the transactional leadership style has a positive relationship with teacher organizational commitment. Positive relationships exist between teachers' organizational commitment and the independent variable's two aspects.

The effect of leadership style on teachers' organizational commitment is undeniable. As a result, the findings of this study are relevant to educational institutions' leadership training and policymakers. Teachers should be able to openly express and share their thoughts and collaborate on key decisions in an open and welcoming environment, which school administrators should foster. Teachers' tension will be reduced, and their activity will rise. It has been determined that for school principals to function at their best, they must make use of opportunities to strengthen organizational commitment.

Recommendations

The following recommendations for practitioners and researchers were made based on the outcomes of descriptive and correlational analysis. As a result, principals who want to improve organizational commitment should think about the following:

1. Provide teachers with an effective leadership style that will increase the academic achievements of the students and organizational commitment.
2. Encourage their teachers to be more satisfied to improve organizational commitment.
3. Make principals aware of the full range of leadership styles to boost levels of organizational commitment among teachers by creating an information exchange system that allows them to improve their knowledge and skills for competence and organizational commitment. In this context, theoretical and practical seminars should be provided in partnership with MOE, the Regional Education Bureau, universities, and principals on the issue.
4. It is hoped that the findings will spur future research into other equally essential factors that influence leadership style. The influence of leadership style on organizational commitment was the main area of interest in this study, which focused on one particular form of work-related behavior. As a result, future studies in this area could expand to include other dimensions related to teacher dedication.

5. In educational institutions, much more research is required. It could be repeated in a variety of secondary education settings. Additional research might be done with private secondary schools from a wider range of backgrounds, as well as a comparison of all employees. Another aspect that has to be addressed is leadership and teacher commitment.

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Ethical Approval

Consent was sought form the research participants. Confidentiality was maintained in reporting information.

Declaration of Competing Interest

This research was exclusively funded by Dilla University. The university will not take any responsibility for the results beyond reporting purposes. The researcher is affiliated with Dilla University as a teaching and research staff. I also confirm that intellectual property rights (IPR) and other ethical principles were adhered to.

Availability of the Data

I would like to inform the journal managers that a set of field data is available and will be shared whenever requested.

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Predictors of Risky Sexual Behavior among Trainee Teachers in the Case of Dilla, Arbaminch, and Hosanna College of Teacher Education; SNNPRS, Ethiopia

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Abstract

This study aimed to examine predictors of risky sexual behavior among trainee teachers in the case of Dilla, Arbaminch, and Hosanna College of Teacher Education, SNNPRS, Ethiopia. In doing so, a descriptive cross-sectional research design was employed. Data were produced from 353 participants (i.e., 191 males and 162 females) and 15 key informants with unique job positions and responsibilities. A sample was selected through a multi-stage sampling technique. Both developed as well as adapted questionnaires and key informant interview protocols were utilized as data-gathering tools. Data analysis was carried out through a nonparametric binomial test, multiple linear regression, and thematic content analysis. The results demonstrated that various triggering conditions are followed by a tendency for the majority of trainee instructors to engage in risky sexual activity. Among predictive variables, social norms and permissive attitudes were solidified as the major predictive factors that trigger trainee teachers towards risky sexual behavior. Trainee teachers who are more prone to the influence of peer pressure and a permissive attitude toward risky sexual behavior are more likely to engage in risky sexual behavior. Thus, it is more advisable for governmental as well as non-governmental organizations to maintain and facilitate long-lasting psychosocial support for college trainee teachers about risky sexual behaviors.

1 Introduction

1.1 Background of the Study

Globally, sexuality and sexual behavior are of great concern to the age group of 15–24 years old (Glen, 2015). This means that risky sexual behavior is one of the most prevalent problems among young people, particularly adolescents. It is a time of change for individuals as they deal with the physical, cognitive, emotional, sexual, and social changes that occur during this developmental period. Adolescents are young people between the ages of 10 and 19 years old (WHO, 2010). It has been observed and realized that young people across the world confront as well as fight with risky sexual practice or behavior, which takes different forms such as having multiple partners, risky casual or unknown sexual partners, early sexual initiation, engaging in transactional sex, forced sexual intercourse, having sex under the influence of alcohol or other stimulating substances, engaging in sex immediately after watching pornographic media, and unprotected sexual intercourse (Odeigah *et al.*, 2019).

The risky sexual behavior of youths can be defined in a number of ways. The most widely used definition for risky sexual behavior could be: unprotected vaginal, oral, or anal intercourse, which also encompasses early sexual initiation or intention and

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engagement, having multiple sexual partners, non-use or inconsistent use of the condom, non-use of contraceptive methods, and sex under the influence of various kinds of substances (Glen, 2015). The Centers for Disease Control and Prevention (CDC) have also defined risky sexual behavior as a behavior that increases one's risk of contracting STIs and experiencing unintended pregnancy (CDC, 2012).

In developing countries where higher education settings are dramatically expanding, it is important to understand the forces that influence youth education and how these forces interlink with colleges (Magu *et al.*, 2012). Higher education level students, particularly university and college students, are exposed to a variety of risky sexual behaviors such as early sexual initiation, multiple sexual partners, unprotected sex, having sexual intercourse with the same sex, being involved in the sex under the influence of various drugs like alcohol, having sex with older age partners, and non-regular partners such as commercial sex workers (CSW) (Alamrew *et al.*, 2013). The increased number of students in higher education colleges, the lack of facilities for living as well as learning conditions, and sexual and reproductive health services might worsen risky sexual behaviors (Alamrew *et al.*, 2013).

Concrete, as well as real knowledge and information about the state of risky sexual behavior and practice and its major pressurizing multivariate predictors, are insufficient and scarce in the current study areas in particular and some African countries in general. Within the African continent, scholars like Mercy *et al.* (2014), who have explored risky sexual behaviors and their predictors, have focused on female in-school adolescents in Delta, Nigeria, as a unit of analysis; men tend to be ignored, and predictors are limited to self-esteem, parental involvement, and religiosity only. Whitton *et al.* (2019) conducted a study on attitudes and risky sexual behavior among youth in Kampala, Uganda; as the title illustrates, the study encircled attitudes only in line with risky sexual behavior.

There are limited studies on the risky sexual behaviors of students in the context of higher education institutions in Ethiopia (Dingeta *et al.*, 2012). There are a few studies that explore factors affecting or associated with college students' behavior to have multiple sexual partners and not to use protective strategies in such risky practices on the current study sites. For instance, Girma (2017) investigated well the effects of social media on students' risky sexual behavior at Hawassa University; however, the scope of the work focused on social media and the university level only, and hence, the study may not be generalized. In the same vein, a study conducted by Tsige (2012) explored attitudes towards risky sexual behavior and sexual practice among Adama University college students in Ethiopia.

The study tried to assess one single predicting variable (*i.e.*, attitude) towards risky sexual practices and unseen others. This conveys that there is a research gap in considering the multivariate variables issue of what norm group, self-efficacy, self-esteem, attitude, and behavioral factor (substance abuse) determine the students' risky sexual behavior in their entire college life. In an attempt to contribute to bridging the above-revealed gaps, this study tried to address multivariate variables. It will also add to the stock of knowledge on the determinants that determine college students' risky sexual behavior and preventive strategies for risky sexual behavior.

In addition to this, as per the observation and experiences of current researchers, the trainee teachers in the teacher training colleges have no dormitory service; rather, they have been living and using their residences outside of the college's campus. This condition may also trigger them to engage in different risky sexual behaviors since the situation may pave the way for more freedom. Thus, the problem is becoming more serious as it leads individuals to various sexually transmitted diseases (STDs) and is deemed one of the most cross-cutting issues nowadays. Due to these, it is important to realize the healthy and unhealthy developmental aspects of school students, identify the major predictors of risky behaviors, including risky sexual behavior, and realize their need for assistance. In light of this, the present study tried to assess the main predictors of risky sexual behavior among trainee teachers in the selected study sites.

Therefore, the study addressed the following basic research questions:

1. What is the prevalence of risky sexual behavior among trainee teachers?
2. What are the major predictors of risky sexual behavior among trainee teachers?

2 Review of Related Literature

2.1 Essence of Risky Sexual Behavior

Risky sexual behavior is increasing swiftly. A troublesome issue is the occurrence of risky sexual behavior among adolescents at large and among college or school youths in particular. Risky sexual behaviors refer to an individual's sexual practices such as having multiple sexual partners, starting sexual-related activity at a very early age, having sex without using a condom, and tending to engage in sexual activities with an unknown person or partner that may increase their susceptibility to the risk of sexually transmitted infections (STIs), including HIV, unplanned pregnancies, and psychological disorders (Kerpelman *et al*., 2016).

Large numbers of school youth or adolescents have limited experience and commitment to sexual relations and are more likely to have risky sexual behavior. This includes a large number of different types of partnerships or multiple partners, unusual sexual practices, and sexual orientation, wishes, expectations, and outlooks compared to other age groups, especially adults (Odimegwu & Somefun, 2017). Having sex with a large number of partners without using a condom and other protective methods is one of the risk factors contributing to sexually transmitted diseases, including HIV transmission, and many investigations have compiled and profiled evidence on the high prevalence of HIV infection among people with multiple partners (Kyilleh *et al*., 2018). According to Kyilleh *et al.* (2018), as quoted in Kato and Omona (2021), "school youths or adolescents engaged in unprotected sexual practices as a way of testing their fertility, assurance of love, bait for marriage, and livelihood; condoms were believed to inhibit the pleasure in sex, and since many engaged in sex for pleasure, the use of a condom was also regarded as impracticable, coupled with inconvenience or challenges involved in getting condoms" (Kato & Omona, 2021).

2.2 Major Predictors of an Individual's Risky Sexual Behavior

Peer groups and risky sexual behavior

Peer groups are social norms that integrate people of the same age who have similar interests and are usually equal in terms of education and social class; in this condition, peer norms and peer influences play central roles in the development of health-related behaviors (Peli, 2017). Peer norms have a significant impact on intentions to have sex, early sexual debut, and subsequent sexual behavior; peers may influence college students, especially youths' sexual behavior, through direct modeling of sexual behavior, including risky sexual practice, and the adolescent's perception of peer outlook, views, or tendency toward sex (Sneed *et al*., 2015). School youth who think and accept that their friends or norm groups are sexually active are more likely to have initiated sex and have more partners compared to youths who perceive that their friends are not sexually active (Olufemi *et al*., 2018).

A study among high school students explains that young people with perceptions that their peers, friends, or norm group approve of and engage in sexual activity are more likely to engage in sexual activity incorporating risky sexual practices themselves (Doornwaard *et al*., 2015). College learners, especially youth, are particularly sensitive to social reinforcements or motivators, especially to the rewards of socializing with peers, which expose them to a heightened need to affiliate with age mates and to act in ways that generate and confirm the admiration of their friends or the same age groups (Blakemore, 2018).

Attitude and risky sexual behavior

According to an elucidation by Guilamo-Ramos *et al.* (2008), as quoted in Muhammad *et al.* (2017), attitude is about a person's beliefs and thinking when engaging in and performing particular behaviors. A non-permissive attitude towards premarital sex is common among conservative cultures like those in Malaysia, Hong Kong, and China. However, the modernization system may have inadvertently or unexpectedly changed people's attitudes, and a permissive attitude is now common among sexually active youths in these countries (Ahmadian *et al*., 2014).

According to Tilahun *et al*. (2020), in a study titled Knowledge, Attitude, and Practice towards Risky Sexual Behaviors among Secondary and Preparatory Students of Metu Town, South Western Ethiopia, it was confirmed that attitude pertained to risky sexual behaviors. About 254 (70.4%) of the respondents responded that they appreciated having substance use (like cigarettes, alcohol, and hashish) that can expose and lead them to risky sexual behaviors. The same study ensured that among the total respondents, around 186 (51.5%) respondents have favorable attitudes towards risky sexual behavior, while the remaining 175 (48.5%) respondents have negative or non-permissive attitudes towards risky sexual behavior. Nigatu and Seman (2011), as quoted in Tsige (2012), stated that practical observation and existing research findings show that for many campus students, there was an unfavorable or negative attitude or outlook towards risky sexual behavior or practice (Tsige, 2012).

Theoretical Model of the Study

Various approaches discuss risky sexual behavior among adolescents from different models. Among these models and approaches, the following is the most significant and has more details on risky behaviors, including risky sexual behavior.

Theory of Planned Behavior

According to Whitton *et al*. (2019), to clearly as well as better understand, predict, and explain an individual's self-control over behaviors, the Theory of Reasoned Action was developed in 1980 by IcekAzjen. This theory was later modified into the Theory of Planned Behavior (TPB), which continues to focus on the behavioral intentions of individuals. According to Whitton *et al*. (2019), the model reveals that intention and ability to control behavior are fed by external background factors. These factors impact the beliefs held by an individual, which cascade to their intentions in a situation and result in the actual behavior in the life of a given individual. The TPB is often used to consider the effects of behavior on the overall disease prevalence through a better understanding of the occurrence of intention and individual beliefs regarding sexual activity and risky sexual behaviors or practices (Ngidi *et al*., 2016).

According to Whitton *et al*. (2019), TPB consists of and explains three types of beliefs: behavioral, normative, and control, each of which is paired with another construct that affects the intention to perform a particular behavior. Behavioral beliefs are based on the expected outcome of the behavior. These beliefs are a result of the attitude toward the behavior, which is the strength of the belief weighted by the evaluation of the outcome. Normative beliefs are the behaviors that are perceived as appropriate by a larger group. These beliefs feed into the subjective norm, or perceived peer pressure, that ultimately affects action. Lastly, control beliefs are the perceived factors that may assist or impede behavior. Control beliefs affect the perceived behavioral control, or ability to perform a behavior, and can act in place of actual behavioral control, which is difficult to measure.

3 Materials and Methods

In this study, to determine the magnitude of major determining predictors towards trainee teachers' risky sexual behaviors, the descriptive cross-sectional survey research design was employed and guided by a convergent parallel mixed research approach through which both quantitative and qualitative data were collected at the same time and analyzed separately and triangulated together. Mixed research design allows for generating and using combinations of both qualitative and quantitative data in a single research project at different stages of the research process (Greene, 2008).

3.1 Target Population of the Study

The target population of this study was all available regular trainee teachers at Dilla, Arbaminch, and Hosanna College of Teacher Education for the 2021/22 academic year. As data secured from the records of respective colleges reveals, the total number of all available regular trainee teachers was almost 2,827 (*i.e*., DCTE = 953, ACTE = 1,035, and HCTE = 839). Thus, it encompasses all students from diverse streams and their respective departments. For the qualitative data, 15 key informants were purposely selected for the sake of having depth and factual information.

3.2 Sample and Sampling Procedure

In the current research, 353 trainee teachers were selected via a multi-stage sampling procedure from their respective colleges. For the qualitative part of the study, 15 key informants were purposely selected to attain some supportive information to triangulate with the main quantitative data of the issue under investigation.

3.3 Data collection instruments

Data collection instruments were chosen and decided based on the types of variables in the study. Both developed and adapted questionnaires were employed to collect information on predictive variables. In doing so, the present researchers used a total of 40 items to measure the determinants of risky sexual behavior. A questionnaire for substance abuse was developed by current researchers based on a review of the literature. Instruments to assess peer pressure, social norms, attitude, and self-efficacy towards risky sexual behavior were reviewed, contextualized, and adapted from Muhammad *et al*. (2017) Youth Sexual Intention Scale (YSI-Q), which was constructed based on the Theory of Planned Behavior. The self-esteem measure was adapted from Rosenberg's (2015) Self-Esteem Measurement Scale (RSE). The measure or instrument for risky sexual behaviors (practice and intention to engage in risky sexual activity) was more internalized, strictly as well as carefully contextualized or adapted from the Risky Sex Scale/Survey of Turchik (2007). The instruments of this study were checked and evaluated by the selected psychology department's staff. The experts evaluated the appropriateness of each item, the required components, the adequateness of the items in each instrument, how each item expressed the required issue, and the amenity of each item in terms of the participants' socio-cultural contexts. In addition to this, a pilot test was carried out by having 10% of the sample size of participants without replacing them in the main study. Thus, the total items' internal consistency, or Cronbach's alpha, was 72.

On the other side, three (3) specific semi-structured questions or key informants' guidelines were used to explore some key, in-depth, and supportive information to triangulate with quantitative data.

3.4 Data Processing and Analysis

After data collection, data cleaning was done to reject substantially incomplete ones. Regarding the quantitative data collected, the process of coding items was done by converting responses to numbers for the sake of the data entry. In addition, organizing close-ended and structured information was done to analyze the contents. Then data entry and analysis were made using the computer-based software SPSS version 20 data processing program.

During data analysis, inferential statistics were deployed, such as a nonparametric binomial test, to test the prevalence of risky sexual behavior among trainee teachers. Stepwise multiple linear regressions were applied to examine the main effects and the interaction effects of predictors (social norms/peer pressure, attitude, self-esteem, self-efficacy, and drug abuse) on the risky sexual behavior of trainee teachers. On the other hand, the qualitative data was analyzed using the thematic content analysis/narration procedure.

4 Results

The central purpose of this study was to assess predictors of risky sexual behavior among trainee teachers in the case of Dilla, Arbaminch, and Hosanna College of Teacher Education, SNNPRS, Ethiopia. To achieve this objective, data were produced via quantitative and qualitative approaches. The results were treated according to the research questions of the present study. In doing so, findings secured via the quantitative approach are presented head-to-head with those of the qualitative approaches as follows:

As divulged in Table 1, the majority of the study respondents (190), or 54%, were above an average or mean value, while 163 (46%) were below the mean value concerning the nonparametric binomial test.

Table 1: Results of Binomial Test on Prevalence of Risky Sexual Behavior among Respondents

Binomial Test						
		Category	N	Observed Prop.	Test Prop.	Exact Sig. (2-tailed)
Practice of Risky	Group 1	.00	163	.46	.50	.166
sexual behavior	Group 2	1.00	190	.54		
dichotomy	Total		353	1.00		

The result confirmed that the majority of respondents tend to agree with all issues that describe the basic features of risky sexual behavior. That is to say that the majority of the respondents engaged in moderate or average amounts of risky sexual behavior on the current study sites. On the other hand, findings from key informants strongly solidified that there is an observable as well as extreme prevalence of risky sexual behavior among students in their respective colleges. The key informants confirmed the existence of risky sexual behavior among students by checking and observing students' odd clothing styles, hairstyles, unique facial features, sexual (erotic)-related actions, and making relationships with many opposite-sex partners in and out of the classroom.

Table 2: ANOVA Summary Result of Multiple Linear Regression Model

ANOVA[a]						
Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	3918.679	5	783.736	27.411	.000[b]
	Residual	9921.542	347	28.592		
	Total	13840.221	352			

a. Dependent Variable: Risky Sexual Behavior
b. Predictors: (Constant), Substance Abuse, Peer pressure/social norms, Self Esteem, Self-Efficacy, Attitude

Table 2 summarizes the information about the variation of the dependent variable explained by the existing model used for this study and the residual that indicates the variation of the dependent variable that is not captured by the model. It is observed that the independent variables have a significant effect on the dependent variable, where the $F - value$ is 27.411 with a $p - value$ of less than 0.05 (*i.e.*, p <0.000), indicating that, overall, the model used for the study is significantly good enough in explaining the variation on the dependent variable.

Table 3: Regression Model Summary to the Independent Variables (*i.e.* model to the major predicting factors of risky sexual behavior among trainee teachers)

Model Summary[b]					
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.532[a]	.283	.273	5.34718	1.847

a. Predictors: (Constant), Substance Abuse, Peer norms, Self Esteem, Self-Efficacy, Attitude.
b. Dependent Variable: Risky Sexual Behaviors.

As shown in Table 3, the value of adjusted R^2 (.273) indicates the predictive variables in the model explain 27% of the variation in the dependent variable. This outcome empirically indicates that independent variables such as peer pressure and permissive attitude are witnessed as predictive variables or factors that trigger trainee teachers to take part in risky sexual behavior.

Table 4 shows the results of the regression model. The result reveals that among predictive variables, self-esteem, self-efficacy, and substance abuse were insignificant, whereas there is a significant relationship between peer norms as well as attitude and risky sexual behavior among the research participants.

As illustrated in Table 4, among the five explanatory variables tested in this study, peer norms with coefficient (β =.183)and attitude with coefficient (β =.423) and attitude with coefficient ($p - value$ < .001) were statistically significant at 5 percent or lower.The result implies that peer group and attitude are attested as predictive variables or factors that propel trainee teachers to engage in risky sexual behavior by the weights and signs on the coefficients of beta. That is to say that there is a high level of involvement in risky sexual behavior among participants who are exposed to the influence of peer pressure and a permissive or directive outlook or attitude towards risky sexual behavior by holding all the other independent variables constant. Furthermore, key informants also frankly proved that there is a direct and obvious pressure or influence from social groups, especially peers, low self-esteem, economic as well as academic dependency, deprived life skills, limitation of sex-related education, out-of-campus residence or owning more freedom, and favorable or permissive views of trainee teachers towards risky sexual behavior.

Table 4: Results of the Regression Model

Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Correlations			Collinearity Statistics	
		B	Std. Error	Beta			Zero-order	Partial	Part	Tolerance	VIF
1	(Constant)	16.139	2.542		6.349	.000					
	Peer norms	.250	.067	.183	3.730	.000	.332	.196	.170	.855	1.170
	Self Esteem	-.024	.068	-.017	-.358	.721	-.025	-.019	-.016	.941	1.063
	Self Efficacy	-.141	.096	-.070	-1.465	.144	-.138	-.078	-.067	.903	1.108
	Attitude	.607	.072	.423	8.408	.000	.501	.411	.382	.815	1.227
	Substance Abuse	.007	.184	.002	.036	.971	.062	.002	.002	.976	1.025

a. Dependent Variable: Risky Sexual Behavior

5 Discussion

The general objective of this study was to assess predictors of risky sexual behavior among all trainee teachers at the study sites. Having this, the discussion was made as follows:

Regarding the first research objective, i.e., the magnitude of the prevalence of risky sexual behavior among respondents, as divulged in Table 1, the majority of the study respondents (190) or 54% were above an average or mean value, while 163 (46%) were below the mean value with respect to the nonparametric binomial test. Thus, the result revealed that the majority of respondents tend to agree with all items that describe the basic features of risky sexual behavior. On the other side, findings from key informants strongly proved that there is a tangible, or observable, as well as extreme prevalence of risky sexual behavior among students in their respective colleges. The key informants assured the existence of risky sexual behavior among students by checking and observing students' odd clothing styles, hairstyles, sexual (erotic)-related actions, and making relationships with many opposite-sex partners in and out of the classroom. The result is utterly supported by and related to the study of Odimegwu and Somefun (2017) in Nigerian youth, which found that large numbers of school youth have limited experience and commitment to sexual relations and are more likely to have risky sexual behavior. It incorporates the large number and different types of partnerships or multiple partners, unusual sexual practices, and sexual orientation, wishes, expectations, and outlooks compared to other age groups, especially adults.

Correspondingly, the current finding is consistent with the investigation of Kyilleh *et al.* (2018), as quoted in Kato and Omona (2021), where school adolescents engaged in unprotected sexual practices as a way of testing their fertility, assurance of love, bait for marriage, and livelihood. Condoms were believed to inhibit the pleasure of sex, and since many engaged in sex for pleasure, the use of a condom was also regarded as impracticable, coupled with inconvenience or challenges involved in getting condoms.

Based on the second objective of the current study, which was to identify the major predictors of risky sexual behavior among participants, as expressed in Table 3, among the five predictive variables tested in this study, peer pressure and social norms with a coefficient (β =.183)and a $p - value$ <.001) and attitude with a coefficient (β =.423) and a $p-value$ < .001) were statistically significant at 5% or lower. The result implies that peer pressure, social norms, and attitude are examined as predictive variables or factors that trigger trainee teachers to engage in risky sexual behavior by the weights and signs on the coefficients of beta. That is to say that there is a high level of involvement in risky sexual behavior among trainee teachers and students who are exposed to the influence of peer pressure and a permissive or directive outlook or attitude towards risky sexual behavior. Furthermore, key informants also confirmed that there is supreme pressure from social groups, especially peers, positive or permissive views, and low self-esteem of trainee teachers towards risky sexual behavior.

The current researchers have tried to explore ample related literature or evidence to conduct cross-checking between the present study's results and already existing research findings. Thus, the current finding on the predictive variable, i.e., the significant influence of peer pressure and social norms towards risky sexual behavior, thoroughly agreed with the finding of Sneed *et al.* (2015), who concluded that peer norms have a significant impact on intentions to have sex, early sexual debut, and subsequent sexual behavior; peers may influence college students, especially youths' sexual behavior, through direct modeling of sexual behavior, including risky sexual practice, and the adolescent's perception of peer outlook, views, or tendency toward sex-related activities. In addition to this, the finding of the current research is quietly consistent with the corresponding investigation by Doornwaard *et al.* (2015), who explain that young school students with perceptions that their peers or norm group approve of and engage in sexual activity are more likely to engage in sexual activity incorporating risky sexual practices themselves. Furthermore, the finding of Olufemi *et al.* (2018) in a study on the prevalence and predictors of early sexual debut among adolescents in Ogbomoso, Nigeria, implicitly supports the present study's finding by explaining that school youth who think and accept that their friends are sexually active are more likely to have initiated sex and have more partners compared to the youths who perceive that their friends are not sexually active.

The finding of the current study regarding the significant impact of a permissive attitude towards risky sexual behavior or practice is supported by Ahmadian *et al.* (2014), who conducted a study on risky sexual behavior among rural female adolescents in Malaysia. They stated that a non-permissive attitude towards premarital sex, or risky sexual behavior, is common among conservative cultures like the people in Malaysia. However, there are inadvertent or unexpected changes in people's attitudes, and a permissive attitude is now common among sexually active youths in Malaysia due to the modernization system. Also, Tilahun *et al.* (2020) in a study titled Knowledge, Attitude, and Practice towards Risky Sexual Behaviors among Secondary and Preparatory Students of Metu Town, South Western Ethiopia, confirmed and agreed that attitudes pertained to risky sexual behaviors; about 254 (70.4%) of the respondents responded that they appreciated, favored, and were willing to expose and engage in risky sexual behaviors. However, the finding is inconsistent with the result of Nigatu & Seman (2011), as quoted in Tsige (2012), who stated that practical observation and systematic review show that for many campus students, there was an unfavorable or negative attitude or outlook toward risky sexual behavior (Tsige, 2012).

6 Conclusion

The current research investigation has tried to surround as well as engross the predictive factors of risky sexual behavior among trainee teachers in the selected teacher training colleges. As a result of both quantitative and qualitative approaches, the majority of trainee teachers are involved in risky sexual behavior at the current study sites. In the vein of linear regression, peer pressure and favorable or permissive outlooks are the major predictors of risky sexual behavior. Furthermore, economic as well as academic dependency, norm groups, one's outlook, deprived life skills, lack of awareness, out-of-campus residence, or owning more freedom are also the major triggering factors behind students' risky sexual behavior regarding thematic content analysis.

Recommendations

Based on the conclusions made from the findings, the following major avenues are forwarded:

- It is advisable that professional counselors, counseling centers, and resources be available to college students.
- Follow-up and monitoring, as well as evaluations, are more advisable for students' both in- and out-of-room maladaptive behaviors (like unique wearing styles, sexual (erotic)-related actions, unusual hairstyles, and having imbalanced alcohols or other stimulating drugs).
- Parents and the community should be involved in the psychoeducation of risky sexual behavior.
- Students in the campus dormitory residence or house service need to be facilitated and maintained.

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Ethical Approval

Consent was sought from the research participants. Confidentiality was maintained when reporting information.

Conflict of Interests

The authors declare that there is no conflict of interest.

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Teacher's Performance Appraisal Practice and Challenges in Government Primary Schools of Dilla City Administration

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Abstract

The main purpose of this study was to assess the current practice and challenges of teachers' performance appraisal practices in government primary schools under the Dilla City administration. The research utilized a mixed-method concurrent triangulation design approach. There were four complete primary schools in the city, and two of them were included in the study. From these schools, 62 teachers, two principals, one school supervisor, two department heads, two PTAs, and two students were selected as a sample. Concerning the sample, teachers were selected using proportional and systematic sampling techniques. Contrary to this, the purposive sampling technique was used to select principals, department heads, and student council; PTAs and one supervisor were also selected by the available sampling method. Findings from both instruments were presented in an integrative way. The findings of the study revealed that teacher performance appraisal has been a common practice, often conducted twice a year, but with the principal as the dominant appraiser. Concerning purpose, the current system of teachers' performance appraisal has not mainly served the developmental drives of PA. The criteria used to appraise teachers were viewed by teachers as fine, but the participation level in the formulation process was forced by the South American Nationalities Education Bureau. Concerning common challenges in the TPA: poor feedback system, low teacher participation, post-appraisal discussions, students' bias, and sometimes using PA for revenge. The text advocates for teacher involvement in formulating TPA criteria, involving stakeholders, and adapting guidelines, while also recommending meticulous assessment of teacher performance using interpersonal communication.

1 Introduction

1.1 Background of the Study

To achieve the objectives for which it was founded, an organization needs both human and non-human resources. The most valued and in-demand of these resources for the effective achievement of the intended goals is people. This is frequently the case since human resources offer the ability, skills, and efforts necessary to efficiently and effectively employ all available resources (Zeng & Qi, 2021). Any organization's management and oversight of its overall activities, whether directly or indirectly, depends on its human resources.

Performance appraisal is a part of the HR management method that identifies, measures, and evaluates staff performance and then discusses that performance with the employee (Ozkeser, 2019). This tells us that performance appraisal is a proper, structured system of measuring and evaluating job-related behaviors and outcomes to get performance reasons and the way to perform effectively in the future so that employees, organizations, and society are going to benefit.

It is considered an instrument through which an employee's performance and capabilities can be

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matched to the job requirements and career plan over time. A properly designed performance appraisal system serves as a device for better communication and development of the employee as well as for the attainment of organizational goals and objectives (Negash *et al*., 2021). General personnel choices are made using a performance appraisal. It contributes to choices about promotions, transfers, and terminations (Islami *et al*., 2018). It acts as a tool for determining training and development requirements as well as a standard by which programs for selection and development are evaluated. The objective of giving employees feedback on how the organization perceives their performance is likewise achieved via appraisal. Similar to other social institutions, schools were created to support the teaching and learning process. They are institutionalized to alter and enhance kids' conduct (Monari & Wanjau, 2022). A system of teacher performance appraisal (TPA) properly designed and implemented is believed to have favorable results in the professional development of teachers. In school settings, according to Vansteenkiste *et al*. (2020), teachers are the primary expensive resources who need and deserve support and encouragement to extend their skills and the frontiers of their knowledge.

In Ethiopia, the present system of performance appraisal of teachers is result-oriented performance appraisal (ROPA) and outlines four performance categories: poor, acceptable, very good, and excellent. Mohammed (2020) based on teachers' results on key, major, and minor tasks. In the context of Ethiopia, primary school teachers estimate that based on the results of the performance appraisal and length of teaching experience, teachers have the chance to grow into nine stages in the career ladder structure: beginner teacher, junior teacher, teacher, and senior teacher, associate teacher, lead teacher, senior lead teacher-I, senior lead teacher-II, and senior lead teacher-III (SREB, 2017).

Teacher performance appraisal in Ethiopia has lots of problems. According to Shugate (2020), some of the problems with teaching performance evaluations in secondary schools in Ethiopia include inadequate evaluator skills, performance criteria that are unrelated to instructors' professions, and a negative attitude towards the entire system of performance ratings.

Presently, government schools at all levels execute performance appraisals, which are occasionally done. However, it seems that performance appraisal is given the proper attention by those schools and exercised periodically more as a usual practice than as a tool of motivation based on which various administrative and developmental decisions are taken.

The major purpose of this study was to assess the practice and challenges of teachers' performance in government primary schools in Dilla city administration. The study also aims to fill the existing gaps and give possible recommendations for improving the performance appraisal practices of the target schools. Therefore, at the end of this study, the researcher planned to achieve the following specific objectives:

- Examine the existing performance appraisals in those government primary schools.
- Assess the awareness of teachers about the purpose of the current TPA.
- Identify the challenges of teachers' performance appraisals in schools.

2 Research Method Approach

For this study, a mixed method was employed. A mixed-methods procedure that combines data from both quantitative and qualitative methods to provide a better understanding of a research problem. It can be useful when unexpected results arise, deepen understanding of quantitative findings, and help design and validate research instruments. Additionally, interviews and document analysis fall under the qualitative approach (Creswell & Zhang, 2009). Mixed research methods are convenient for the social and human sciences as distinct research is used to collect extensive data and confirm findings from different data sources. In general, mixed-methods research represents research that involves collecting, analyzing, and interpreting quantitative and qualitative data in a single study or in a series of studies that investigate the same underlying phenomenon.

Researchers may use various mixed-methods research designs depending on the study topic, available data, and available resources (Dawadi *et al*., 2021). For this study, the researcher used convergent parallel triangulation mixed methods designs. This design benefits the researcher, who converges or merges quantitative and qualitative data to provide a comprehensive analysis of the research problem (Creswell & Zhang, 2009). In this procedure, the qualitative and quantitative strands are usually weighted equally.

Hence, the researcher used triangulation to validate quantitative data for this study. In this context, the researcher collects both types of data at the same time. In short, interview qualitative items were adjusted and held at a time during the collection period of the quantitative survey.

This design directly compared and contrasted the quantitative results with qualitative findings for corroboration and validation purposes. A qualitative component promotes a better understanding of complex situations (often an understanding of the phenomena from the participant's point of view), while a quantitative component allows researchers the opportunity to answer questions that concern relationships among the measured variables to explain, predict, and control phenomena.

2.1 Population

The target population of this research was all the permanent teachers, principals, cluster supervisors, department heads, PTAs, and student councilors in the entire four primary target schools in the Dilla City administration. In Dilla city administration, there were four full-cycle primary schools.

2.2 Sample Size and Sampling technique

Mulualem *et al*. (2022) define sampling as the process of selecting a subset of the population to serve as a representative sample of the entire population of objects, people, or animals. Additionally, it says that a sample that contains the majority of the data necessary to achieve the research's goal is one that was correctly chosen. To make the sample area manageable and representative, the schools were selected by a simple random sampling technique. In this case, two primary schools are taken from the total number of primary schools in the city. In the two full-cycle primary schools, there were 73 teachers and 18 administrative bodies that could participate in the appraisal of the performance of teachers (six principals, four department head teachers, four PTA representatives, four representatives' student council, and one cluster supervisor).

According to Dhivyadeepa (2015), in order to perform a stratified random sample, the researcher has to obtain a comprehensive list of the population and clearly split each unit into one stratum. Thus, the researcher took into consideration the number of teachers, department heads, and student council members while choosing a sample from a school for this study using stratified and simple random selection approaches.

Concerning sample teachers, first, the researcher determines the sample teachers via the Cochran sampling size determination table, and then they are selected using proportionality and systematic sampling techniques. Then, from each school, sample units were selected via a systematic sampling technique. 50% of teachers from each school were included in the study, which makes up a total of 62 teachers. This technique was used to include teachers from each school in proportion to their size to ensure representation in the population. After the number of samples was determined, systematic sampling techniques were used, and, thus, every 3^{rd} teacher on the name list was selected using the formula,

$$K = \frac{N}{n},$$

Where "N" is the total number of teachers in the school and "n" is the sample required from that population.

Utilizing a formal tone, the selection of 62 teachers from the sample schools was accomplished through the application of the formula $K = \frac{N}{n}$, where "n" signifies the necessary sample from the population and "N" denotes the entire teacher population in the respective schools. Moreover, two Parent-Teacher Associations (PTAs) were selected via purposive sampling, which entailed the active participation of two PTA members in the teacher appraisal process, while the remaining individuals did not actively participate in PTA tasks. In essence, two department heads with a year or more of experience and two student representatives from grade eight were chosen through purposive sampling based on their maturity level and academic performance. Additionally, two principals, one from each school, were selected to provide accurate data that would best enable them to address the research questions. As noted by Manna and Mete (2021), purposive sampling allows researchers to choose a sample based on their informed judgment and understanding of the population. Furthermore, one supervisor was selected using the available sampling method.

2.3 Data Collection Instruments

Considering the aforementioned fact, three types of data collection instruments were used: primary data sources, namely the questionnaire and the interview. Secondary data sources were relevant documents that the researcher used as additional evidence for the study. Questionnaires were used to collect information from teachers, and interviews were used to collect information from principals and supervisors, student council members, department heads, and PTA members. The questionnaires were composed of closed-ended items and contained demographic variables about the respondents.

The closed-ended items were treated using a 5-point Likert scale of strongly agree (SA), agree (A), moderate (M), disagree (DA), and strongly disagree (SD) with their respective values of 5, 4, 3, 2, and 1, respectively. The questionnaires contain five different parts and 34 closed-ended questions. When responding due to language barriers, the questionnaire distributed to teachers was translated from English to Amharic. Most of the items were adopted from previous related studies (Baye, 2021). An equal number of the questions were restructured by the researcher himself.

Interviews are a valuable tool for researchers, as they facilitate the collection of diverse perspectives from participants and enable the gathering of detailed, first-hand information (Kelly *et al*., 2010). The study utilized interviews to gather valuable information from selected informants, including department heads, student council members, PTAs, school principals, and cluster supervisors, based on their roles. This study utilized semi-structured interviews to gain in-depth insights into the strategies and measures employed by each school to achieve their goals, particularly regarding teacher performance appraisal practice, due to their flexibility in question order.

The study analyzed sample schools' performance appraisal records for the 2021–2022 academic year, portfolio documents, and appraisal criteria, as well as portfolio documents demonstrating the link between appraisal and the TPA process, criteria, problems, and interventions.

2.4 Procedures for Data Collection, Analysis, and Interpretation

The initial step in data analysis was systematic data collection, which entails gathering data sets that are examined for patterns and trends (Englander, 2012). This process involves utilizing a variety of data collection techniques, including surveys, focus groups, interviews, observations, experiments, and secondary data analysis. These techniques are employed to gather data from a range of sources, investigate it for trends and patterns, and interpret it to gain new insights. In this study, data was collected through surveys, interviews, and document analysis and examined to provide context for the information that had been gathered.

2.5 Method of Data Analysis

The initial portion of the questionnaire, which pertained to biographical information, was analyzed and interpreted through the use of descriptive techniques, specifically percentages. Additionally, the data collected via closed-ended questions was encoded and analyzed statistically using SPSS version 23. To evaluate the differences between two independent groups of data collected from schools A and B, an independent t-test was utilized. This statistical method is appropriate for comparing the means of two sets of data (Duffy & Orlandi, 2008; Watson & Moritz, 1998). Thematic analysis and semi-structured interviews were employed to obtain words, phrases, statements, and paragraphs to narrate the qualitative data. The qualitative data were utilized as a complement to the quantitative data.

3 Results and Discussion

3.1 Practice of Teachers' Performance Appraisal

Accordingly, Tables One, Two, and Three, followed by a data description, present the practice that was measured in terms of accessibility, frequency of occurrence, and appraisers in a teacher's performance appraisal in the targeted school.

Table 1: Availability of Teachers' Performance Appraisal

Is there formal appraisal process in your school?						Total	
Yes	%	No.	%	I have no idea	%	No.	%
61	98.4	1	1.6	0	0	62	100

Participants were asked to rate the availability of PA practice; accordingly, 61 (98.4%) of teacher respondents confirmed that there was a formal PA practice in their schools. whereas the remaining one respondent in the table responded that there is no formal PA.

Table 2: Frequency of occurrence of Teachers' Performance Appraisal

How often is performance appraisal conducted in your organization? Per year								Total	
Once	%	Two times	%	Three times	%	Four times and above	%	No.	%
8	12.9	50	80.6	3	4.8	1	1.6	62	100

Concerning the frequency of occurrence displayed in the above, 50 (80.6%) respondents confirmed that performance appraisal activities were held in their school semiannually or twice a year. The remaining 8, 3, and 1 teachers assured that they were appraised once a year, three times a year, and four times or more a year.

Table 3: About appraisers of Teachers' Performance Appraisal

In your school, who are involved in the process of teachers' performance appraisal?											
Directors &/or Vice Directors	%	Department heads	%	Student	%	PTA	%	Supervisors	%	All	%
48	77.4	6	9.7	3	4.8	1	1.6	4	6.5	0	0

Regarding appraisers, a majority of the respondents (48, 77.4%) claimed that directors or vice directors; the rest (six, 1, 4, and 0 respondents) discovered that department heads, student council members, members of PTA, cluster supervisors, and all were involved in undertaking teachers' PA, respectively.

In the same mood, interviewees asserted that there is a formal appraisal practice in their school to achieve different goals. Interviewee TR revealed that "performance appraisal in our school aims to enhance better learning and achieve the school's intended outcome." Similarly, interviewee WMH explained that "the aim of PA in the school is to identify the strengths and weaknesses of teachers and coach them on their limitations to help my school achieve its intended purpose." Likewise, interviewee TH asserted that "the purpose of PA in my school is to motivate best-performing teachers and punish unsuccessful teachers, provided that both accountability and motivational purposes are materialized." Similarly, interviewees SUP and SC explain, "The results of our twice-a-year teacher performance evaluation at our school will be used as a measure of progress and other benefits." This tells the researcher that performance is being assessed in the schools. The independent $t-test$ results in terms of availability of formal PA in each school, regarding the frequency of PA in the two schools, and concerning who is involved in the process of teacher PA (D = 0.576 and $p - value$ >0.05), (D = 0.666 and $p - value$ > 0.05), and (D = 0.355 and $p - value$ >0.05) respectively, show that the mean of the appraisal practice didn't bring any statistically significant variation between schools, implying that the accuracy of the performance appraisal practice was almost the same across schools.

Table 4: Independent samples $t - test$ for carry out of performance appraisal

	Sig.	Sig. (2-tailed)
Is there a formal appraisal system in your school?	.255	.576
		.323
How often is performance appraisal conducted in your school?	.829	.666
		.685
Who are involved in the process of teachers' performance appraisal?	.019	.233
		.355

Note: The Sig (2-tailed) is a two-tailed p-value used to evaluate the null hypothesis that the mean is not equal to 50, and a value below the alpha level indicates statistically significant difference from zero.

3.2 Purpose of Teacher's Performance Appraisal

The purpose of a teacher's performance appraisal is to assess their effectiveness and provide feedback on their teaching methods and strategies.

Regarding the purpose of the performance appraisal, 13 items of questions were arranged and disseminated to teacher respondents. Of these questions, the first five focus on the purpose of PA being to improve instruction; the second three items of questions focus on teachers' professional development; the third two items of questions weigh on aiding school administrators in making decisions; and the last three items of questions concentrate on motivating teachers to take more responsibility.

Therefore, evidence respondents stated that PA experience in their respective schools was successful in improving instruction (mean = 4.51), enhancing teachers' professional development (mean = 4.57), aiding school administrators in passing decisions (mean = 4.17), and motivating teachers for more responsibility (mean = 4.23). This shows that a significant number of participants had the view that their PA had met its intended purpose.

The interviewees asserted that the purpose of PA is theoretically to achieve different goals. Nevertheless, the data from Interviewee TR didn't verify the findings presented in the table above. They brightly explained that the PA purpose in their respective schools is not meant to secure periodic promotion, motivation, and scholarship. Likewise, concerning improving classroom preparation, however, they clarified that it had made an insignificant contribution. According to Interviewee SUP, "Currently, teachers' performance appraisal is used to upgrade the teacher's education status; otherwise, the contribution of performance appraisal in rewarding outstanding teachers in terms of finance, certificates, and moral support is negligible."

In the same vein, interviewees WMH and TH make clear that the purpose of PA is right now for "paper value," implying that PA experience in the sample schools rarely contributed to improving instruction, enhancing teachers' professional development, or making valid administrative and motivational decisions.

Independent t-test results under the subject of improving instruction (D = 0.473 and $p - value$ > 0.05) indicate that there is no significant difference between the two schools. However, on the topic of identifying the strengths and weaknesses of teachers (D = 0.038 and $P - value$ 0.05), this shows that there is a significant difference between the two schools.

Regarding performance appraisal criteria Performance criteria are statements of standards used for measuring job-related performance. For performance to be effective, it should encourage the participation of employees in designing the organizational goal up to its implementation. This is also true in the education system, where all stakeholders have to participate in all aspects of educational development activities.

Table 5: Performance appraisal purpose

No	Items related purpose of performance appraisal		1	2	3	4	5	Total	Mean
1	To improve the teaching-learning process	F	-	-	3	12	47	62	4.71
		%			4.8	19.4	75.8	100	
2	To identify the strengths and weaknesses of the teacher	F	-v	1	5	15	41	62	4.55
		%	-	1.6	8.1	24.2	66.1	100	
3	To decide on teacher's salary improvement	F	4	1	11	11	35	62	4.16
		%	6.5	1.6	17.7	17.7	56.5	100	
4	To enhance students' academic achievement	F	-	1	3	18	40	62	4.56
		%	-	1.6	4.8	29.0	64.5	100	
5	To offer a high-quality education	F	-	-	7	12	43	62	4.58
		%	-	-	11.3	19.4	69.4	100	
6	To identify training needs (training purpose)	F	-	5	4	10	43	62	4.47
		%	-	8.1	6.5	16.1	69.4	100	
7	To link teachers needs with the organizational goal	F	1	2	9	24	25	62	4.79
		%	1.6	3.2	14.5	38.7	40.3	100	
8	To help teachers develop professionally	F	-	1	8	15	38	62	4.45
		%		1.6	12.9	24.2	61.3	100	
9	To provide information on teachers' promotion & transfer	F	2	4	8	19	29	62	4.11
		%	3.2	6.5	12.9	30.6	46.8	100	
10	To control the overall performance of teachers	F	1	2	9	20	30	62	4.23
		%	1.6	3.2	14.5	32.3	48.4	100	
11	To improve the motivation of teachers	F	-	2	6	17	37	62	4.44
		%	-	3.2	9.7	27.4	59.7	100	
12	To provide feedback on teachers' performance	F	1	2	5	15	39	62	4.44
		%	1.6	3.2	8.1	24.2	62.9	100	
13	To serve as the basis for reward and punishment	F	6	2	11	20	22	62	3.82
		%	9.7	3.2	17.7	32.3	35.5	100	

The values are; strongly disagree =1; disagree =2; Undecided =3; agree =4; strongly agree = 5

As illustrated from Table 6, items 1–5, in the teachers' appraisal criteria, the group of respondents responded with their disagreement with the participation of teachers in the formulation of TPA, the clarity of the criteria objectives, the relevance of the TPA criteria, the measurements of teachers' professional competency, and the appraisal criteria that measure teachers' motivation to work. Almost all respondents showed their disagreement, and the mean values were less than the expected mean, which was 2.44. This implies that the entire group of respondents opposed the participation of teachers in the formulation of the TPA. However, Q2, 3, 4, and 5, with respective mean values of 4.03, 4.29, 4.02, and 4.24, indicated that the group of respondents agreed on the issues related to performance appraisal criteria.

Table 6: Regarding Performance appraisal criteria

No	Items related to criteria of performance appraisal		1	2	3	4	5	Total	Mean
1	There is the participation of teachers in the formulation of criteria	F	6	6	9	21	20	62	2.44
		%	9.7	9.7	14.5	33.9	32.3	100	
2	The criteria used are clear	F	2	4	11	18	27	62	4.03
		%	3.2	6.5	17.7	29	43.5	100	
3	The criteria used are relevant to the purpose of PA	F	2	2	6	18	34	62	4.29
		%	3.2	3.2	9.7	29.	54.8	100	
4	The appraisal criteria objectively measure teachers' professional competence	F	2	5	10	18	27	62	4.02
		%	3.2	8.1	16.1	29	43.5	100	
5	The appraisal criteria measure teachers' motivation to work	F	2	2	6	21	31	62	4.24
		%	3.2	3.2	9.7	33.9	50	100	

The values are; strongly disagree =1; disagree =2; Undecided =3; agree =4; strongly agree = 5

The interviewee believed that the criteria were already developed by the Ministry of Education framework and adopted by the SNNPR education bureau. Speak with SUP and TH. It is important to note that teachers do not participate directly in the preparation process; they know what is expected of them when they enter into a goal agreement with the principal before starting work. SC has no information regarding a teacher's participation in the formulation of PA criteria. The independent t-test result regarding performance appraisal criteria, items of questions related to the participation of teachers in the formulation of criteria, the clarity of criteria used, the criteria relevant to the purpose of PA, the appraisal criteria measurement, and teachers' professional competence, and the appraisal criteria measure teachers' motivation to work.

Table 7: Independent samples T-Test for performance Appraisal criteria

Items	Sig.	Sig. (2-tailed)
There is a high participation of teachers in the formulation of criteria	.101	.216
		.276
The criteria used are clear	.232	.135
		.185
The criteria used are relevant to the purpose of TPA	.471	.917
		.926
The appraisal criteria objectively measure teachers' professional competence	.721	.949
		.950
The appraisal criteria measure teachers' motivation to work	.504	.852
		.867

Note: The Sig (2-tailed) is a two-tailed p-value used to evaluate the null hypothesis that the mean is not equal to 50, and a value below the alpha level indicates a statistically significant difference from zero.

Regarding Performance appraisal problems/ challenges

Since teachers' performance appraisal is a complex activity, schools have faced problems in practicing it. These problems may be related to the skill and competence of evaluators; the operational process of the appraisal scheme and the perception of teachers about performance appraisal; the bias of evaluators; the maturity level of evaluators; and the criteria. In this regard, some (nine) of teachers' performance appraisal problems were listed, and 62 of them were asked to rate those problems based on the Likert rating scale: very highly serious (5), highly serious (4), moderately serious (3), minimally serious (2), and very minimally serious (1). According to Asfaw (2021), the mean scores from the data analysis were interpreted as 0.05–1.49 (very low), 1.5–2.49 (low), 2.5–3.49 (medium), 3.5–4.49 (high), and above 4.5 (very high).

Table 8: Regarding Performance appraisal problems/challenges

No	Items related to problem and challenges of PA		1	2	3	4	5	Total	Mean
1	Appraisers lack of the necessary knowledge & skill	F	9	8	13	17	15	62	3.34
		%	14.5	12.9	21	27.4	24.2	100	
2	Appraisers lack of the necessary experience	F	9	8	19	12	14	62	3.23
		%	14.5	12.9	30.6	19.4	22.6	100	
3	Poor administration of the overall process	F	10	9	15	15	13	62	3.19
		%	16.1	14.5	24.2	24.2	21	100	
4	Shortage of pre-appraisal discussion	F	9	10	11	13	18	62	3.5
		%	14.5	16.1	17.7	21	29	100	
5	Lack of post-appraisal discussion	F	2	4	8	19	29	62	4.11
		%	3.2	6.5	12.9	30.6	46.8	100	
6	The presence of negative perception of teachers about PA	F	6	7	12	19	18	62	3.58
		%	9.7	11.3	19.4	30.6	29	100	
7	The presence of inadequate and inappropriate appraisal criteria	F	10	6	17	17	12	62	3.24
		%	16.1	9.7	27.4	27.4	19.4	100	
8	Bias of evaluators that can replace organizational standards by personal values in the evaluation process	F	9	13	12	12	16	62	3.21
		%	14.5	21	19.4	19.4	25.8	100	
9	Students aren't mature enough to properly evaluate their teachers	F	8	7	9	15	23	62	3.61
		%	12.9	11.3	14.5	24.2	37.1	100	

In response to items 1–9, in the Performance Appraisal Problems/Challenges, the teacher respondents reply with the necessary knowledge and skills, the necessary experience, administration of the overall process, per-appraisal discussion, and post-appraisal discussion, the perception of teachers about PA, inappropriate appraisal criteria, the bias of evaluators, and maturity to properly evaluate their teachers. Almost all respondents showed their agreement, and the mean values were greater than the expected mean (3:00), which were 3.34, 3.23, 3.19, 3.5, 4.11, 3.58, 3.24, 3.21, and 3.61.

On the other hand, the responses obtained from interviewees TR and WMH were forwarded with the following suggestions: "*Due to the lack of knowledge, skill, and experience of appraisers, they found that managing the appraisal process in their school was one of the more difficult tasks*." Interviewee SUP also argued that "*post-appraisal discussion is the most serious challenge in the teacher performance appraisal process*." Interviewees TH and SC, on their part, forwarded the following as the major constraints: "*Mostly higher levels of academic achievement*" students are involved in the appraisal of teachers' performance. According to them, students ranked 1-3 mostly participated in teacher evaluations. Students do not have any training in PA, and sometimes they use the appraisal as a revenge mechanism. Most students were not aware of the purpose of TPA, so they simply filled out the form. Some students are regularly "biased in marking on matters unrelated to the performance of teachers."

4 Discussion

4.1 Practice of Teachers' Performance Appraisal

Regarding availability, in those sample schools, teachers' performance is evaluated on a regular basis or by procedure, and the schools have a planned way of letting the teachers know where they stand and how they are progressing. This means very large numbers of teachers were assured of the existence of performance appraisal practices in primary schools in the mentioned city.

Regarding the frequency of the occurrence of performance appraisals in the selected school, questionnaires and interviewee respondents revealed that there is teacher performance appraisal practice that occurs twice a year. Teacher evaluation should be conducted twice at the end of each semester (MOE, 1997). This is because not only are the rules established twice a year, but instructor performance ratings are also calculated each semester as part of the student assessment process. In this situation, teacher performance evaluation, formative use of performance appraisal, or making the best use of teacher evaluation data poses several issues and is used to decide on career promotion, give out performance advantages, or penalize instructors who don't perform at the same level.

Regarding appraisers of TPA, the result shows that the majority of participants (48, or 77.4%) claimed that the school principals are the main ones, and it seems like a solitary agent who evaluates their performance through inbuilt or other parts of performance related to the school system. However, appraisal of the performance of teachers requires participation from different stakeholders (MOE, 2002). Nonetheless, this shows that either the school leader is not willing to use other possibilities, such as self-appraisal, colleagues, etc., or may have other justifications. This issue needs further investigation. If employees are not allowed to evaluate themselves, they will become highly defensive during the appraisal review and may refuse to accept the evaluation result. It is also critical to understand the weak points of your coworkers.

The independent $t-test$ results in terms of the availability of formal PA in each school, regarding the frequency of PA in the two schools, and who is involved in the process of teaching PA (D = 0.576 and p-value >0.05), (D = 0.666 and p-value >0.05), and (D = 0.355 and p-value >0.05), respectively, show that the mean of the appraisal practice didn't bring any statistically significant variation between schools, implying that the accuracy of the performance appraisal practice was almost the same across schools.

4.2 Performance appraisal purpose

In goal theory, Locke and Latham (2019) highlight mechanisms that connect goals to performance outcomes. The other theory Control theory emanates from the work of Emile Durkheim and focuses attention on feedback as a means of shaping behavior (Glad & Ljung, 2018). The social cognitive theory was developed by Bandura. According to Beauchamp *et al.* (2019), it is based on his central concept of self-efficacy. This suggests that what people believe they can or cannot do has a powerful impact on their performance.

Regarding the purpose of performance appraisal, the study results indicated that teachers are not competing with each other based on their PA results for promotion or demotion. The investigation made it clear that the teachers' outcomes were undesirable. However, the wrong attitude of carelessly "using it" as if teachers must be promoted; there is also concrete quota promotion (professional training, upgrading) from teachers in the school. The purpose of performance appraisal was misused or interpreted negatively in this case.

In line with this, it is possible to explain why the interviewees reflect the purpose of PA destructively. The researcher suggested that the current system of performance appraisal is conducted only for procedure purposes, and there is no way to accomplish its purpose properly. When there is an opportunity for benefit, the quota and the type of subject will come together, and the teacher who does not perform well will possibly benefit from the quota. In the same way, promotion is associated with a pay raise, but all teachers benefit from promotion, even if they do not perform well. This means that the purpose of teacher evaluation has failed.

Independent $t-test$ results under the subject of improving instruction (D = 0.473 and $p-value$ > 0.05) indicate that there is no significant difference between the two schools. However, on the topic of identifying the strengths and weaknesses of teachers (D = 0.038 and $P-value$ 0.05), this shows that there is a significant difference between the two schools. Therefore, the aim of performance appraisal in school B is to help the appraisers identify the strengths and weaknesses of teachers and support them based on evidence accordingly, but in school A, the topic of identifying the strengths and weaknesses of teachers is not reasoned. This indicates that in school B, there is formative assessment practice, while in school A, there is no formative assessment practice at all. Glad & Ljung (2018) and Ozbay (2019), a control theory, focus attention on feedback as a means of shaping behavior. Thus far, the rest of the questions Q 8, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, and 20 have independent $t - test$ results (D = 0.473, 0.724, 0.265, 0.584, 0.996, 0.772, 0.086, 0.846, 0.42, and 0.588, respectively). This shows that with a P-value > 0.05, there is no significant difference between the two schools regarding the above points of the question of TPA.

4.3 Performance appraisal criteria

In this regard, respondents were asked to evaluate the appraisal criteria that have been practiced in the sample school. The result shows that the mean values (2.44, 4.03, 4.29, 4.02, and 4.24) and weighted mean (3.8) were above the ideal mean (3). The mean value of the Q is 2.44. This implies that the majority of respondents opposed the idea. According to Nadot (2022), nevertheless, any small defect in the procedure may lead the practice to complete failure. However, in the teacher's appraisal system, the group of respondents expresses their disagreement with the participation of teachers in the formulation of PA.

In line with this, the interview group made public that there was no teachers' participation in the formulation of the TPA criteria. The interviewee believed that the criteria were already developed by the Ministry of Education Framework and adopted by the SNNPR Education Bureau. The interview group made it clear that teachers do not participate directly in the preparation process; they know what is expected of them when they enter into a goal agreement with the principal before starting work. It is also important to understand if there are any questions or concerns that you do not understand. According to the results of the survey and the interview, one of the reasons why teachers do not participate directly in the preparation of the assessment criteria is that the assessment criteria have already been developed by the Ministry of Education and sent to all regions. The second is that when teachers agree on a goal with the principal, they discuss the key, major, and minor tasks in depth and ensure understanding.

According to the information obtained from the document, the criteria for the evaluation of the performance of teachers transferred from the Ministry of Education and the criteria prepared by the principals of both sampled schools are the same. This does not make teachers see themselves as stakeholders who attempt to achieve the school's goals and objectives rather than being directly involved in setting standards. As Sewagegn (2019) stated, when preparing the teacher's performance appraisal standard, if the teacher knows as much as possible about the standard that is being evaluated, there will be many benefits.

The independent t-test result regarding performance appraisal criteria, items of questions related to the participation of teachers in the formulation of criteria, the clarity of criteria used, the criteria relevant to the purpose of PA, the appraisal criteria measurement and teachers' professional competence, and the appraisal criteria measure teachers' motivation to work ($p - value$ > 0.05) shows that the mean of the appraisal exercise regarding the criteria didn't bring any statistically significant variation between schools, implying that the accuracy of the performance appraisal criteria was almost the same in two schools.

4.4 Performance appraisal problems and challenges

In this regard, nine of the teachers' performance appraisal problems were listed, and 62 teachers were asked to rate those problems based on the Likert rating scale very highly serious (5), highly serious (4), moderately serious (3), minimally serious (2), and very minimally serious (1). According to Asfaw (2021), the mean scores from the data analysis were interpreted as 0.05–1.49 (very low), 1.5–2.49 (low), 2.5–3.49 (medium), 3.5–4.49 (high), and above 4.5 (very high).

Therefore, the mean score of participants in the three items, Q.36, 38, 41, and 30, was related to the maturity level of evaluators (3.61), the negative perception of teachers towards performance appraisal (3.58), the shortage of per-appraisal discussion (3.5), and the shortage of post-appraisal discussion (4.11).

Participants were rated as having highly serious problems, with a mean score ranging from 3.5 to 4.49. While, again, looking at the mean score of the five items, Q33, 34, 35, 39, and 40, they related to poor administration (3.19); lack of skill and knowledge (3.34); experience with regards to PA (3.23); adequate criteria (3.24); and evaluator bias (3.21), which was rated as a moderately serious problem by participants with a mean score ranging from 2.5 to 3.49.

On the other hand, the interview with them also disclosed that due to the lack of knowledge, skill, and experience of appraisers, they found managing the appraisal process in their school to be a difficult task. They indicated that lack of necessary training of appraisers and low participation of teachers when teachers' performance appraisal criteria were developed as the number one major problems of TPA in their schools. For, students with mostly higher levels of academic achievement are involved in the appraisal of teachers' performance (Almutairi & Shraid, 2021). Students do not have any training concerning PA, and sometimes they use the appraisal as a revenge mechanism.

As LEMJI (2019) also argued, post-appraisal discussions between the assessed and the appraiser are a highly serious challenge in the teacher performance appraisal process. The $t-test$ analysis for the data in both (school A and school B) government primary schools indicates that there is no significant difference between the two schools.

5 Conclusions

Formal teachers' performance appraisals are often conducted twice a year. The practice is measured in terms of accessibility and frequency of occurrence. Although the guidelines state that many stakeholders are involved, the principal is the one who has the highest share. This is outside of the guidelines and can lead to biased results. Every teacher gets promoted when it comes to performance; every teacher gets a pay raise and benefits. On the contrary, teachers who do not show the proper quality and results in the work of the school may be prevented from progressing under the excuse of quotas. Either way, the process is unfair. Teachers are not competing with each other and are promoted as long as they meet the criteria. Teachers expressed satisfaction with the suitability of the standards. However, they feel that other points that should be included have been left out because they were not involved in developing the appraisal criteria. Here, the evaluation criteria come from the Ministry of Education, but they remain localized. Rather than presenting another alternative, the principals copied the requirement from the guidelines and gave it to us to implement, so this opens the door to influence and can be a hindrance to achieving the school's goals.

According to the findings, insufficient training for evaluators is a critical issue in addressing the challenge and problem at hand. For example, the evaluators selected from among the students use the appraisal of the teachers to take revenge on the appraiser. Moreover, the lack of teacher participation in the development of performance evaluation criteria for teachers is a significant area for improvement. The absence of post-evaluation discussions, teachers' difficulty in identifying their weaknesses, and their low regard for the importance of school improvement are additional factors that contribute to the problem. Consequently, teachers may perceive evaluation results as lacking relevance to their professional growth.

Recommendations

Drawing from the aforementioned conclusions, the following recommendations are suggested: Schools in the study area must implement formal teacher performance appraisal systems and practices, typically conducted on a biannual basis. However, it is crucial to note that these practices often appear superficial and aim to fulfill bureaucratic requirements rather than foster genuine improvement. A fundamental shift in perspective is therefore necessary. To address this issue, school leaders ought to utilize teacher performance appraisals as a means of driving strategic, developmental, and communicative initiatives, with the ultimate goal of enhancing teacher academic and professional competencies as well as overall school performance.

Concerning the intended purpose of performance appraisal, the author of the study proposes the following recommendations: school administrators should carefully consider the objective of teacher performance evaluations and carry them out according to relevant guidelines and objectives. Additionally, it is suggested that each school establish its own comprehensive teacher performance evaluation plan to optimize the system's operation and implementation. This plan, along with the school's strategic objectives, should be communicated to all stakeholders and experts. Furthermore, it is recommended that school principals design tailored training programs for teachers and implement a performance-based reward system to motivate superior performers.

The criteria for evaluating the performance of teachers are primarily formulated at the central level, and there is a sense of dissatisfaction among teachers that these criteria do not take into account the contextual situation, including differences between schools and the lack of participation of teachers in the process. To address this issue, the Education Bureau should ensure that assessors are involved in the preparation of evaluation criteria in appropriate circumstances. School leaders and experts should also consider the current situation of the schools and contextualize the appraisal criteria in a way that can enhance the capacity of teachers. To avoid problems with teacher performance evaluations, it is important to use interpersonal communication and set evaluation criteria without personal or political interference. In addition, recruiting older students to serve as student appraisers and providing adequate training on academic and social relationships can help address the issue.

Conflict of Interests

The authors declare that there is no conflict of interest.

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Repercussion of Higher Education Reform: In the Case of Mathematics Department Students before and after the reform in One of the Universities in Ethiopia

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Abstract

This study sought to examine how mathematics department students of public universities in Ethiopia were affected by recent reforms in higher education. A descriptive survey design was used to carry out the investigation. A total of 86 mathematics students participated in the study. It filled out achievement test questions, 30 of whom joined the department after taking the new reform's freshman course in 2020 and 30 and 26 of whom joined the department before the new reform's freshman course was delivered in 2019 and 2018, respectively. A 40-item achievement test on elementary concepts of algebra in mathematics was used as an instrument for the study. Out of 40 concepts, the mean scores reported by students who joined the Department of Mathematics after and before taking their freshman course were 19 and 15 respectively. Moreover, there was a significant difference in students who joined the Department of Mathematics after and before the new reform and took the freshman course regarding understanding and solving elementary algebraic concepts of mathematics with equal variances, not assumed to be p = 0.040 less than p = 0.05 level of significance. It is therefore recommended that it is essential to improve mathematics success for all students and that the new freshman course reform plays a significant role in increasing students' mathematics success rate. This study has proven that they are trainable, and therefore, the new reform of freshman courses has to be nurtured for all students.

1 Introduction

1.1 Background of the Study

Ethiopia, a country in the Horn of Africa, is surrounded by Kenya in the south, Sudan and South Sudan in the west, Somalia in the east, Eritrea in the north, and Djibouti in the northeast. Ethiopia's formal name is the Federal Democratic Republic of Ethiopia, and it is a federal parliamentary republic with twelve regional states and two city administrations (FDRE). Ethiopia is the second most populous nation in Africa, with a population of about 115 million (Boateng, 2020). Amharic is the country's official working language. It has 90 different languages or dialects (Boateng, 2020). The strategic role of education as a tool for a nation's growth and social advancement is well acknowledged. Not this point, but the effects and results of reform in terms of economic and social development policies, as well as implementation, financing, quality, and effectiveness, which are all desired by all the actors involved in this transformative vision, are the main topics of discussion on a global scale(Vasquez-Martinez *et al*., 2013).

Ethiopia is currently engaged in an ambitious reform process to guarantee the sustainability of its economic development and prosperity. The country's expanding need for skilled laborers was not able to be met by the education strategy, which

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was in place for more than 20 years. The new reform may therefore aid in focusing efforts on reshaping the system and assuring quality above quantity (Mengisteab, 2021). This was due to a focus on quantity rather than quality. Among these reforms, education has been a foremost priority for the government since the coming to power of Prime Minister Abiy Ahmed in 2018. Though the concept of reforming the education sector had been a topic of discussion before his ascent, these reforms were initiated in earnest just over a year ago. As a starting point for the reforms, Roadmap, (2020)stated that the government accepted that previous attempts at educational reform had yielded mixed results.The reform, which is being introduced by the new government, has opened an opportunity to foster holistic development throughout the nation and will have a key role in producing competent professionals who can compete effectively in the labor market and equipping them with the skills needed to promote sustainable development (Mengisteab, 2021).

In addition, the reform has a key role in addressing gaps in higher educational institutions, which are the main sources of skilled and educated manpower. This gap has put a question mark on the country's ambitions for rapid industrialization, as rapid industrialization depends on the availability of highly skilled and competent manpower that can execute activities accordingly. In this regard, quality education is a foundation that can play a pivotal role in shuttering skill shortages and knowledge gaps. Educational changes necessitate a broad evaluation of their motivations, goals, implementation, and outcomes by people who work in the educational systems where they are implemented (Vasquez-Martinez *et al*., 2013).

Higher education in Ethiopia includes several positive aspects as well as some systemic, pervasive problems. The reports' limited ability to encourage development stems from the fact that they are currently confidential to institutions and the government (Ashcrof & Rayner, 2011). Reform's primary objectives are to assist students in connecting and applying these concepts to real-world contexts, as well as in better understanding the fundamental concepts and issues in a variety of courses. This calls into question the usefulness of change in the mathematical community. It is expected that the reform will progress to produce competent mathematicians. Reform may have the advantage of educating students about the typical steps involved in practicing mathematics, such as formulating hypotheses and seeking out counterexamples. It has also enhanced mathematics by promoting the use of real-world examples.

1.2 Statement of the Problem

The Ethiopian government prioritized science, technology, engineering, and mathematics (STEM) subjects. Since its inception, one of the principal goals of mathematics education has been to raise the interest of students in mathematics subjects, develop their capacities to engage in scientific inquiry, develop their problem-solving capacity, and teach them how to reason in a scientific context. Among many problems observed in the Ethiopian education system, students' low achievement in mathematics was the major one. The imperative in recent years about improving student outcomes is also about improving the quality of the teaching workforce. Students' quality itself is an important factor in determining gains in student achievement. The main motive for investigating students' background knowledge is to improve student outcomes. On the other hand, to improve students' quality, it is crucial tounderstand what their background knowledge involves.

Thus, this study focuses on students' background knowledge as a key factor in their performance in mathematics. Several studies (Bekele, 2019; Prescott, 2022; Starke, 2021) stress the importance of the background knowledge students hold. Before higher education reform, students joined the Mathematics Department as their last chance to stay in university. The mathematics departments are accepting such uninterested candidates that they even have no awareness of the basic mathematical operations and concepts.

In recent years, it has become increasingly difficult to recruit and retain qualified BSc Mathematics students. There is also concern about attracting high-achieving and motivated candidates to BSc mathematics programs. To overcome the mentioned problems in teacher education in hard science courses like mathematics in particular and the education system in general, the Ethiopian government prepared the Roadmap with the purpose of: fostering holistic development in all citizens; equipping citizens with confidence and competence; promoting critical thinking; producing competent professionals to compete effectively with their counterparts in the global marketplace; spurring entrepreneurship and innovation within a framework of social responsibility; and building a citizenry with strong ethical and moral values based on the pursuit of justice, peace, and unity in diversity (Roadmap, 2020).

More specifically, the roadmap recommends a fundamental shift in the way that education is administered and practiced in the country, calling for an educational system founded on indigenous knowledge that is supportive of national development goals and encourages civic engagement (Roadmap, 2020). Though the Roadmap's ambitions and implementation are still in their infancy, the course it charts is welcome news for an educational sector, particularly for mathematics in need of reform and mathematics desperate to unleash the untapped potential of its best and brightest. In order to alleviate the problem fundamentally, examine its implications for the instructional process, and derive evidence-based suggestions for educational policy, it is necessary to conduct a study on the impact of the currently underway reform of higher education from wider or narrow perspectives. .

In any study of mathematics, the language of mathematics plays a vital role (Thangarajah, 2020), which is intended to provide a comprehensive and rigorous account of the basic concepts and materials from mathematics that necessitate a good foundation to treat fundamental mathematical tools in science. The newly launched Ethiopian higher education reform, the first-year freshmen mathematics course for natural science, rigorously discusses the basic concepts of logic and set theory, the real and complex number systems, mathematical induction, least upper bound and greatest lower bound, functions and types of functions, polynomial and rational functions, logarithmic and exponential functions, trigonometric functions, hyperbolic functions and their graphs, and analytic geometry (MOSHE, 2020). Accordingly, to see the influence of this reform on students' achievement in the department of mathematics in the narrow sense of assessing its impact, this study was guided by the following general and specific objectives.

1.3 Objectives of the Study

The objective of this study is to see the repercussions of higher education reform on students who join the mathematics department.

Specific objectives

- To investigate the achievement of freshmen students on the basic language of mathematics concepts before and after the reform;
- To exhibit the significant difference in basic mathematics achievement results of freshman students before and after the reform that joined the mathematics department for the bachelor's science program.

1.4 Hypothesis

$N1$: There is a significant difference in the basic mathematics achievement results of freshmen students who joined the mathematics department for the Bachelor of Science program before and after the reform.

1.5 Significance of the study

It is important to see the impact of the new higher education reform in Ethiopia, even though over the past 27 years, education in Ethiopia has made progress in quantitative but not qualitative terms (Yadessa & Shemelis, 2022). The higher education system is fraught with challenges and issues bordering on quality. The common goal is to create a healthy educational environment for students (Hui-Ling & Chien, 2017). And nobody would deny the strategic nature of education as a vehicle for development and social progress. The focus of global discourse on the topic is not this particular point, but rather the quality and effectiveness of the reform's effects and consequences, which are what all the parties involved in this transformative vision want to see (Vasquez-Martinez *et al.*, 2013). The advantages of reforms and the degree to which they will be advantageous are often unclear. Many students of mathematics suffer greatly from this uncertainty. It appears crucial to evaluate the relative advantages of reform in mathematics improvement. Above all, there's a big difference in timing between when the original educational reform is implemented and when it becomes clear whether or not the change will have the desired effects.

2 Research Method

2.1 Population and Sample

This study was conducted on students who joined the department of mathematics at one of Ethiopia's universities. The study population consists of mathematics department students. By convenience sampling techniques, there were 86 mathematics students, of whom 30 joined the department after taking the new re-form's freshmen course in 2020 were categorized in one group, 30 students who joined the department in 2019 and another 26 students who joined the department in 2018 (both groups joined the department before the new reform's were categorized in another group), and all participated in the study at entry point to the department, *i.e.*, department placement.

2.2 Design of the Study

The researchers devised a quantitative case study to investigate the effects of the new higher education reform on mathematics students at a single Ethiopian university. Quantitative data was analyzed based on descriptive and inferential statistics. Descriptive statistics were examined to get the percentage, mean, and standard deviation; inferential statistics were examined by using the $t-test$ to determine whether there was a significant difference between two groups on basic elementary mathematical concepts. A significant difference between two groups has been tested at the 0.05 level of significance because of the possibility of a level of significance between 0.01 and 0.1. This research was designed to investigate the extent of the repercussions of new reforms in higher education on mathematics students at one Ethiopian university.

According to Anderson and Krathwohl's Taxonomy (2001), understanding different types of functions means constructing meanings of activities and graphic messages by writing, exemplifying, classifying, inferring, comparing, or summarizing (Anderson & Krathwohl, 2016). Based on this taxonomy and the researcher's understanding of basic elementary mathematics concepts, the researcher prepared the achievement test question from the Mathematics Review Manual (Lovric, 2009) and from other related studies. Two of the researcher's colleagues had examined the validity of a test prepared by the researcher using basic elementary mathematics concepts. A retest was performed in a 30-minute interval to determine the reliability of test instruments, and its correlation was 0.998, indicating that the test instrument is reliable. The prepared test has been delivered for 2018 and 2019 entries to the mathematics department to examine their background knowledge of basic mathematics, and then, having the results of the previous two groups as one group, the achievement test was adopted for 2020 entry students that joined the department after the new reform of the refresher course in 2020.

2.3 Data Analysis Technique

The researcher distributed the prepared tests, which were then gathered for analysis. Thus, the collected data were organized, interpreted, and analyzed using a percentage, mean, standard deviation, and independent $t-test$, followed by analyses from which summaries and conclusions were drawn. The associated values of the degree of agreement were multiplied by a number. The rating was calculated by dividing the total number of respondents by the sum of the products of value and frequency. The ground mean was then calculated by adding all rating means within a category and dividing the result by the total number of cases. An interpretation was made based on the ground mean, and conclusions were drawn on the fundamental questions. The standard deviation was used to show how far responses had been scattered from the grade mean. To assess the significant difference between two groups' achievement of basic elementary mathematics concepts, a $t-test$ was conducted and a detailed analysis was made.

3 Results

The analyses of the data took place based on two statistical methods: descriptive statistics (percentage, mean, standard deviation (ST. DV), skewness, and kurtosis) and inferential statistics ($t - test$). Then, the interpretation of hypotheses regarding the differences in basic mathematics achievement results between students who joined the department before the reform (*i.e.*, 2018 and 2019 entries) and those who joined after the reform (*i.e.*, 2020 entries) was used. The descriptive frequency and percentage of statistical findings from students who understood the fundamentals of mathematics on those chosen topics were reported as follows:

To explore the baseline of students' background knowledge of those selected basic concepts of mathematics, students were made to take the test question at the first class of the school year of their first membership in the Mathematics Department. Descriptive statistics were used to examine students' background knowledge on selected basic concepts of mathematics as follows:

Table 1: Descriptive statistics: students' test questioner result on selected basic concept of mathematics out of 40

Group	Mean	N	Std. Dv	Variance	Kurtosis	Skewness
After the New Reform	18.9149	30	9.82196	96.471	-.776	-.034
Before the New Reform	15.0385	56	8.59996	73.959	-.922	.266
Total	16.8788	86	9.35717	87.557	-.844	.168

Table 1 shows the means, standard deviations, skewness, and kurtosis for test questions by class. As the table shows, there is a mean difference between the two groups with the data distributions being skewed on the left side (-.034), indicating that Mean < Median < Mode, whereas the data distributions are skewed on the right side (.266), indicating that Mean > Median > Mode. Although the two groups' kurtoses are -0.776 and -0.922, indicating that the distribution of the result is relatively flat.

To test the Hypothesis

$N1$: There is a significant difference in the basic mathematics achievement results of students who join the department mathematics before and after the new reform.

The Levene test of the test questioner is detected (Sig = 0.475), which indicates no violation of homogeneity between the two groups. If the p-value is significant (less than 0.1 at a 90% confidence level), the variance of the subgroups is not homogeneous and is estimated using Tamhane's T2 (Gupta, 1999), but because the data is homogeneous, an Independent Samples Test was performed using equal variances rather than the assumed Sig (P) = 0.040, which supports the alternative hypothesis that there is a significant difference in the basic mathematics achievement results of the study.

Table 2: Independent Samples Test

		Levene's Test for Equality of Variances		$t - test$ for Equality of Means						
									95% CI of the Difference	
		F	$Sig.$	t	df	$Sig.$ (2-tailed)	Mean Difference	Std. Error Difference	Lower	Upper
G345	Equal variances assumed	.514	.475	2.094	97	.039	3.88	1.85	.20157	7.55
	Equal variances not assumed			2.080	91.99	.040	3.88	1.86	.17417	7.57

Graphical representation of the distribution of two groups is shown as follows

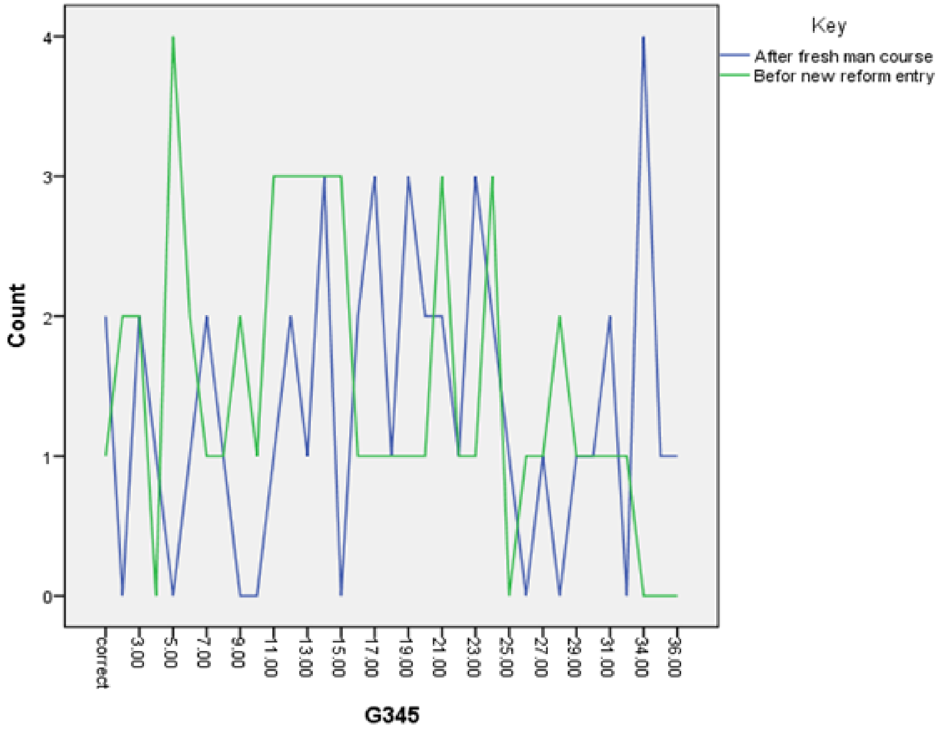

Figure 1: Distribution of two groups

4 Discussion

The current study contains an analysis of the repercussions of higher education reform on students who join the mathematics department. As table 1 shows, from the definition of skewness and kurtosis: "Skewness" characterizes the symmetry of the collected data distribution. If the distribution of data is skewed to the left, we call it negatively skewed. This occurs when mean < median < mode is used. If the distribution of data is skewed toward the right, we call it positively skewed. When mean > median > mode, this occurs (Brown, 2011). According to Brown (2011), kurtosis gives information about the group distribution of peakedness or flatness compared to the normal distribution. Whereas the distribution of positive numbers is relatively peaked, the distribution of negative numbers is relatively flat (Brown, 2011).

As can be seen from above, the data distributions are skewed on the left side (-.034), indicating that Mean < Median < Mode, whereas the data distributions are skewed on the right side (.266), indicating that Mean > Median > Mode. Although the two groups' kurtosis is negative, indicating a relatively flat.

We presented some of the students' work below to triangulate the achievement of students in the two groups, *i.e.*, before and after the reform, respectively. Errors were mainly seen when adding, subtracting, and exponentiating the power of zero of exponential expressions in a term. Students who had not taken the freshman course prior to the reform were more affected than students who had taken the freshman course after the reform. Students who had not taken the freshman course had difficulties with both operation and direction signs and demonstrated too many misunderstandings when working with signs. The researcher realized the impact of the new reform refreshment course on some concepts in mathematics. The following are samples of five students' work before and five students' work after the new refreshment reform to demonstrate the problem of computations in simple mathematical language from both sides, presented below.

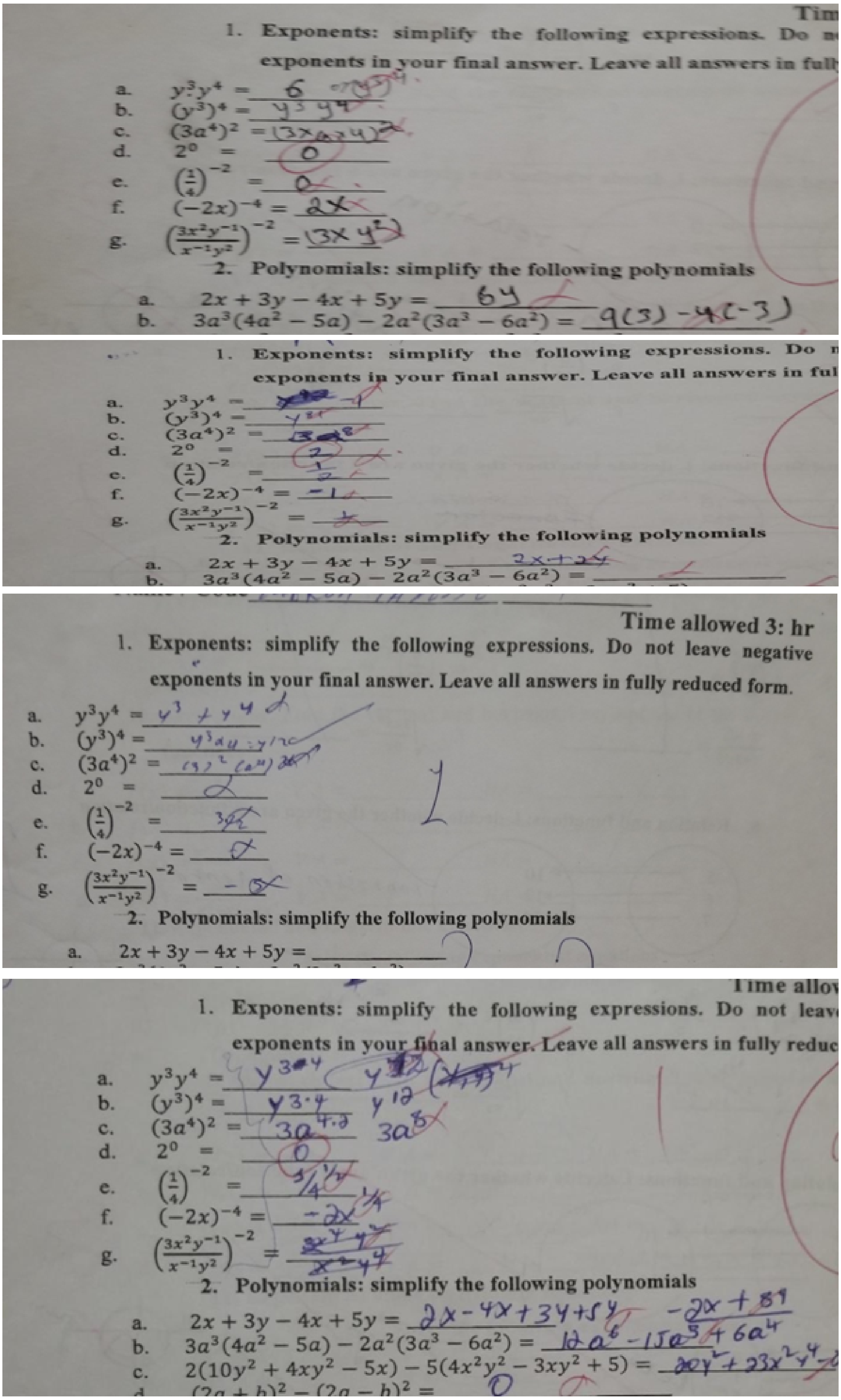

Figure 2: Five students work before new reform

Let see some of students work from the second group (among the students after the reform)

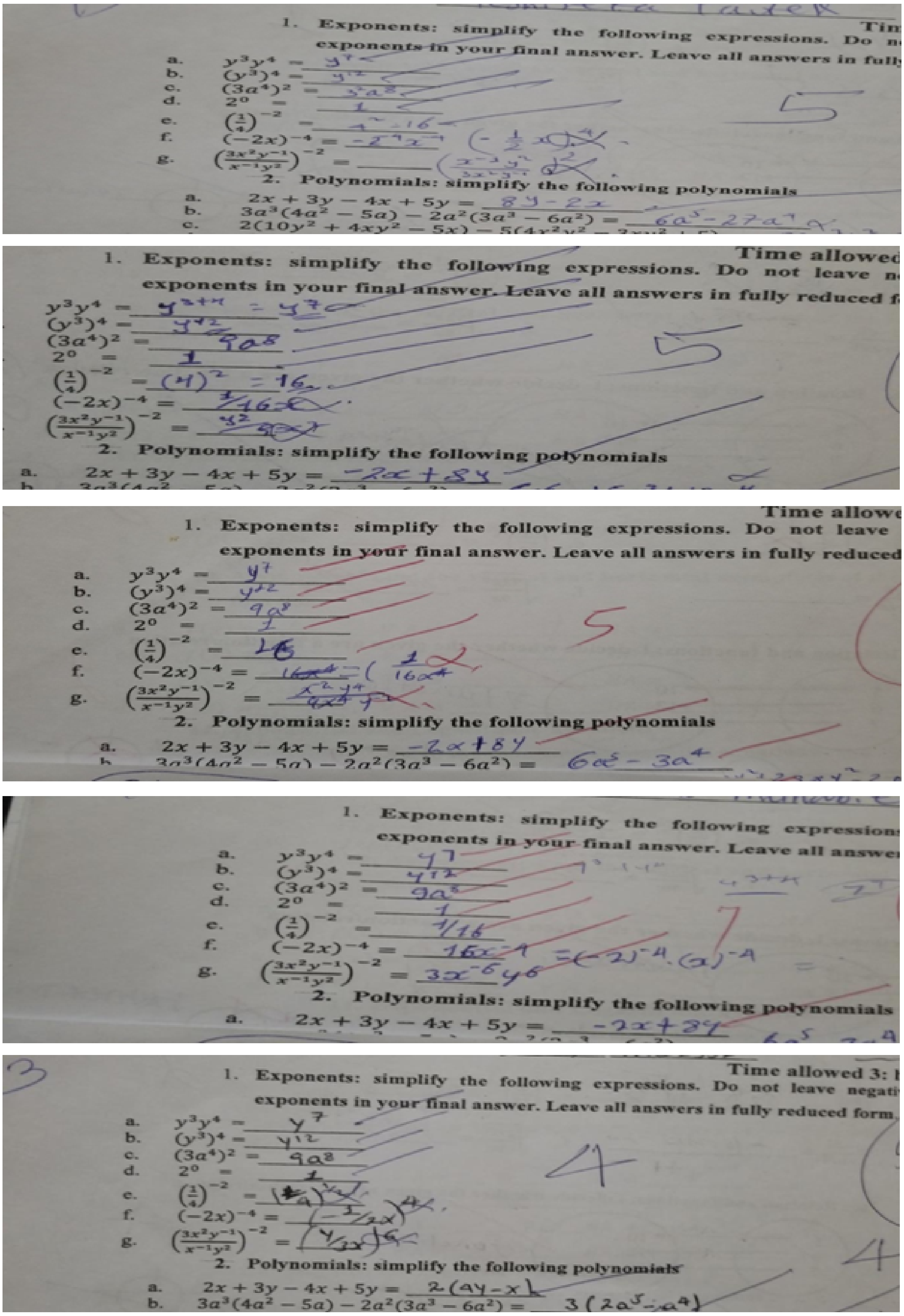

Figure 3: Five students work after they took new reform course

The impact of the reform on students can be seen in some of the simple mathematical computations selected from the above two images.

From table 2, the significance level is $Sig\ (P)$ = 0.040, which is less than 0.05, which supports the alternative hypothesis that there is a significant difference in the basic mathematics achievement results of the study. Figure 1 also shows the distribution of results for the two groups.

5 Conclusions

The extent of achievement of students who took the freshman reform course versus those who entered university before the freshman program launched and did not take the freshman reform course towards the basic language of mathematics concepts on their first day at university was investigated in this study.

Groups that took the reform refreshment course outperformed those who did not and who joined the mathematics department before the reform refreshment course. Students who took the refreshment course in the new governmental reform performed better than those who didn't have the opportunity to pass through the reform's freshmen course.

The finding specifically indicates that students who took the mathematics refresher course (Math. 101) performed better than those who did not take the basic language of mathematics course in their freshman year.

As a result, the key contribution of this finding is that: (1) the new reform of the freshman course plays a significant role in improving the success of all students in mathematics. (2) To increase the success rate of students in mathematics, this study has proven that they are trainable [not clear], and therefore, the teachers who give new reforms to freshman courses have to nurture all students.

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Influence of social media utilization and parent adolescent communication on academic- achievement of secondary school students in south Ethiopia

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Abstract

This study aimed to assess the influence of social media utilization and parent-adolescent communication on academic achievement at Hodo Public Secondary School. The basic research questions formulated for the study were: 1. Is the intensity of social media utilization and parent-adolescent communication predicting academic achievement among study participants? 2. What is the extent of social media utilization and parent-adolescent communication among the study participants?; and 3. Is there a gender difference in terms of social media utilization? The cross-sectional design was applied to achieve its objectives. Both stratified random sampling and simple random sampling techniques were used. 253 participants were selected, including ten percent contingency, from a total of 487 students. Nine teachers were randomly selected for interviews; both the primary and secondary data were collected. The quantitative data was analyzed by descriptive (mean, standard deviation, percentage) and inferential statistics (linear regression, sample, and independent t-test) using Statistical Package for Social Sciences (SPSS) Version 20.0. Also, the process of analyzing qualitative data began with coding, classifying, and categorizing the obtained text data from interviewees through note-taking and tape recording into concepts or codes. The findings of this study revealed that the intensity of social media utilization and parent-adolescent communication have a statistically significant influence on academic achievement (=.001, F (2,216) =.101, p =.034). The extent of social media utilization and parent-adolescent communication was 95%CI: social media utilization (M = 1.90, SD = 2.63), t (219) =1.498, p =.046, and parent-adolescent communication (M = 2.57, SD = 3.50), t (219) =1.736, p =.012, which implied that there is a statistically significant difference in the extent of social media utilization and parent-adolescent communication among study participants, and there was no statistically significant difference between the mean score of social media utilization among male (M = 65.97, SD = 3.950, n = 152) and female (M = 65.97, SD = 3.950, t(67) = 1.576, p =.049) at the.05 significant level. This implies that the finding shows that there is a significant influence of social media utilization and parent-adolescent communication on the academic achievement of secondary school students. This indicates that parents or guardians, teachers, counselors, or concerned school personnel and the government should take part in designing an awareness-creation program to utilize social media and boost academic achievements.

1 Introduction

1.1 Background of the Study

Several studies have demonstrated consistent poor academic performance among senior secondary school students (Kolawale & Dele, 2012; Aina & Olanipekun, 2014). Aina and Olanipekun (2015) also emphasized the worrisome state of academic achievement in both secondary and post-secondary schools. This concern is shared by students, parents,

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teachers, and educational authorities worldwide. To improve the quality of education, Ethiopia introduced the school improvement program, which aims to enhance student learning and academic achievement (MOE, 2016). Various factors, both internal and external to students, can influence their academic performance, including the use of social media and patterns of parent-adolescent communication. Social media has become ubiquitous in almost all aspects of human life, but it is especially influential during adolescence, a period characterized by unique communication dynamics between parents and adolescents (Smetana *et al.*, 2015). While parenting plays a crucial role in fostering autonomous functioning during adolescence, it can have negative effects on academic achievement and behavior if not properly managed (Suizzo, 2020).

According to Nalwa and Anand (2018), social media is defined as a form of electronic communication wherein users interact and freely share, exchange, and discuss information, ideas, personal messages, and other content about themselves and their lives using a multimedia mix of personal words, pictures, videos, and audio. This communication occurs through online platforms while connected to the Internet. Additionally, Ahn (2019) states that social media refers to the means of interactions among people in virtual communities and networks, where they create, share, and exchange information and ideas. Students actively engage in connections for new information, knowledge sharing, research groups, and other interests as part of an online academic society (Kuppuswamy & Narayan, 2018). The evolution of social media has led to both negative and positive effects on society (Dhaha & Igale, 2013). According to other studies, the negative impact is more prevalent when social networking sites are used in the classroom, as multitasking diminishes performance (Nicole, 2017).

Parents play a significant role in adolescents' lives and education. Their communication limits and parameters can influence adolescent behaviors (Rodríguez-Fernández *et al.*, 2019) and act as a protective factor in risk situations (deLooze *et al.*, 2012), promoting positive trends in adolescence overall (Grolnick *et al.*, 2015). Academic achievement among adolescents has been linked to positive parental communication (Wang & Sheikh-Khalil, 2014). Parents' involvement in their children's education, as well as the joint influence of parental warmth from both fathers and mothers, play a role in their children's achievements and school engagement (Wang & Sheikh-Khalil, 2014). Some research has shown a positive association between parental communication and academic outcomes in adolescents (BrajšaŽganec *et al.*, 2019; Otani, 2020), while other research suggests no or even a negative relationship between a lack of parental communication and achievement (Bronstein *et al.*, 2015). Additionally, communication between parents and children has an impact on adolescent behavior through interactions where parents express beliefs and values while sharing emotional elements (Hollmann *et al.*, 2016). Communication between parents and children is associated with improved performance in adolescents (Trung & Ducreux, 2013).

Academic achievement refers to how students handle their studies and the completion of assigned tasks by their teachers (Kimberly, B., *et al.*, 2019). According to similar research conducted by Ward *et al.* (2016), academic achievement is defined as the outcome of education, measuring the extent to which students, teachers, or institutions have accomplished their educational goals. Therefore, academic achievement can be observed and measured through an individual's behavior in a particular situation. Semester average achievement (SAA) and test results are used to assess students' academic achievements, and this issue particularly affects underperforming students in both secondary and postsecondary schools (Kolawale *et al.*, 2012).

As a result, the researchers feel that further study is needed to better understand the influence of social media utilization and parent-adolescent communication on academic achievement among secondary school students. Therefore, the primary goal of this study is to examine the impact of social media utilization and parent-adolescent communication on academic achievement among Hodo secondary school students in the Kembeta Temaro zone of southern Ethiopia.

1.2 Statement of the Problem

There is no doubt that we are experiencing technological developments that are influencing our daily lives, and social media has become a significant presence in the minds of students, resulting in drastic changes. Nowadays, most youth and students have Facebook accounts. According to Kuppuswamy and Narayan (2018), students these days are so engrossed in social media that they spend almost 24 hours online. They encounter many negative impacts on their education, to the point where students tend to neglect their studies to keep up with media platforms such as chatting, texting, and gaming. Additionally, Nicole, (2017) states that students addicted to social media platforms spend most of their time chatting about unrelated issues, pay no attention during teaching hours, and fail to concentrate during learning hours. Students typically spend more time multitasking by visiting multiple sites and consuming a large amount of content (Nicole, 2017; Nalwa & Anand, 2018). Even in classrooms, it has been observed that some students are constantly engaged in messaging and using Facebook while the teaching is taking place. Other studies conducted by Obi *et al.* (2012) have shown that the use of these sites also affects students' use of English and grammar. Students become accustomed to using abbreviations and short forms of words in their chat rooms and then unintentionally incorporate them into their classroom writing. For example, they may use "4" instead of "for," "U" instead of "you," and "D" instead of "the," which could negatively impact their assessments in class.

A lack of communication and ineffective communication between parents and their children can be considered a major source of family problems that inevitably result in adjustment problems among adolescents in school. Maladjustment includes manifestations such as unfavorable attitudes toward learning, poor academic performance, low self-concept, lack of motivation, and misbehavior. Nowadays, most adolescents encounter various levels of negative experiences through social networking sites (SNS) that educational institutions fear may negatively influence students' self-esteem and academic performance due to social media disturbances and ineffective parent-adolescent communication (Satir, 2013).

However, there were no studies done on the aforementioned issues concurrently in the same study. In addition, the researcher undertook this study because there haven't been any local studies in this field. Most of the researchers focused on examining the effects of parental adolescent communication on academic achievement and social media utilization on academic achievement among university students, except for a few studies carried out at secondary schools with small sample sizes. Furthermore, no studies have been conducted on the simultaneous effects of social media utilization and parent-adolescent communication on academic achievement. Thus, this study is designed to fill the previous research gaps and meet the needs of local research. The researcher believes that more studies are needed to increase awareness of how to use social media and parent-adolescent communication to improve academic achievement. Without such efforts, social media utilization and communication between parents and adolescents related to academic achievement will continue to be significant challenges for secondary school students in Ethiopia. Therefore, this study aimed to investigate the relationship between social media utilization, parent-adolescent communication, and academic achievement among students at Hodo Public Secondary School.

Based on this objective, the researcher formulated the following research questions:

- Is the intensity of social media utilization and parent-adolescent communication predictive of academic achievement among study participants?
- What is the extent of social media utilization and parent-adolescent communication among the study participants?
- Is there a gender difference in terms of social media utilization?

1.3 Operational Definitions

- **Academic Achievement**: The selected students' 2020 academic year first-semester performance was based on the student's semester average performance (SAA) from 100%.

- **Parent-adolescent communication** is an interaction between adolescents and biological or non-biological parents who are demanding and responsive to them. In this study, it is operationally defined as a ratio-level measurement that refers to the respondents' total score on the parent-adolescent communication scale during the data collection period.
- **Social media utilization** is the usage of online technology platforms that help connect people from far and wide. In this study, it is operationally defined as a ratio-level measurement that refers to the respondents" total score on the Social Media Utilization Scale during the data collection period.

2 Conceptual framework (relationship) between the variables

The researcher briefly discussed the contents of the framework for investigating the impact of social media usage and parent-adolescent communication on the academic achievement of secondary school students. In this study, the independent variables (IV) were social media utilization and parent-adolescent communication, which were believed to influence academic achievement (DV). Additionally, Figure 1 below illustrates the connection between the demographic variable (sex) and social media usage.

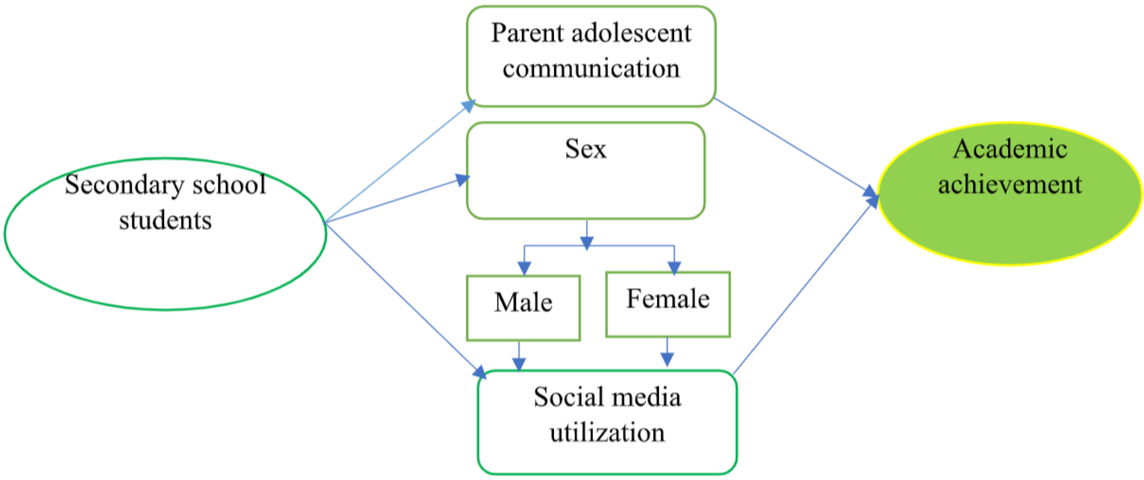

Figure 1: Conceptual Framework on the influence of Social Media Utilization and parent-adolescent communication on Academic Achievement

3 Research Design and Method

3.1 The Study Area

The study area of this research was Hodo public secondary school in Kembata-Tembaro Zone. The Hodo public secondary school is located in SNNPRs. It is also found 329 km southwest of Addis Ababa, 187 km west of Hawassa town, 56km west of Durame town, and 31 km east of Omo River (Tembaro woreda transport office). The researcher purposefully selected Hodo public secondary school from other public and private secondary schools in Kembata Tembaro Zone. The reason for selecting Hodo Secondary School was that the majority of students are found to be extreme users of social media. In this area, students are extremely using social media by using mobile phones through free Wi-Fi at school as well as Internet cafeteria shops based on the worries of teachers, school principals, and the school community, which initiated the researcher to study this area.

3.2 Study Design and Period

From April 1 to April 30, 2020, in this study, the researcher applied a cross-sectional research design to collect data at a single point in time to analyze and interpret in connection to qualitative data collected from selected teachers. It allows the researcher to apply surveys, questionnaires, and interviews to gather data from participants as well as explore characteristics, behaviors, or attitudes within a specific time frame.

3.3 Study Participants

There were 3 principals (2 males and 1 female), 37 teachers (26 males and 11 females), and 487 students (309 males and 178 females) who were available during the data collection period.

Table 1: Population frame

Grade	Sections											
	A			B			C			D		
	Male	Female	Total	Male	Female	Total	Male	Female	Total	Male	Female	Total
Ninth	44	28	72	48	24	72	40	32	72	36	36	72
Tenth	37	13	50	31	18	49	34	16	50	39	11	50

3.4 Sample and Sampling Techniques

To select participants for this study, a mixed probability sampling technique involving stratified and simple random sampling was used. In stratified sampling, the researcher divided the students into strata based on grade level, gender, and sections. Using simple random sampling, sample students were then selected from each grade level and section in proportion to their representation in the population. The number of sample students from each grade level and section was determined by multiplying 0.52. The table below displays the proportion of the sample size from each grade and section. Individual students were then selected using simple random sampling, similar to a lottery method. In this case, every student in the population had an equal chance of being selected. In the subsequent process, pieces of paper with "Yes" and "No" written on them were placed in a box, corresponding to the total number of students in each section. Students were then asked to randomly select one piece of paper. The final sample consisted of 253 students from both grade levels. Only those who chose "Yes" were included in the study.

Table 2: Sample Frame

Grade	Sections												Grand Total
	A			B			C			D			
	Male	Female	Total	Male	Female	Total	Male	Female	Total	Male	Female	Total	
9^{th}	23	14	38	25	12	37	21	17	38	19	19	38	150
10^{th}	19	7	26	16	9	25	18	8	26	20	6	26	103

To get information researcher expected to get subgroups or subsets of the population which is called a sample. In line with this concept out of 487 populations, 253 samples were selected including 15 percent contingency by Yemane (1967).

3.5 Sample size determination formula

$$n = \frac{NZ^2P(1-P)}{E^2(N-1)+Z^2P(1-P)}$$

Key: n = sample population
N = total population
Z = $z - score$
P = proportionality
E = alpha significance level

3.6 Data Collection Instrument

In the study, both primary and secondary sources of data were used. Primary source information was used in the study to find out the more relevant and original characters of the research participants (Kothari 2007). The primary source of data was distributed to 253 actual samples of the study through a questionnaire (Likert scale). But clear data collected from 219 participants, an in-depth interview with nine participants of the interview, and also the secondary sources of data addressed by document analysis reviewing the semester achievement report (SAA) of the students that were brought from the record office of the school to explore the influences of social media utilization and parent-adolescent communication on secondary school student's academic achievement.

3.7 Methods of Data Collection

To gather reliable and well-organized information, the following procedures were used: the Likert scale survey questionnaire and an in-depth interview.

Questionnaire

Social media usage was measured by a five-point scale questionnaire adopted and modified by the researcher (Helou & Ab-Rahim, 2014; Mingle & Adams, 2015). Initially, the instruments were adapted, modified, and checked by an expert in the English language and then translated into Amharic. They modified and translated the questionnaire to make it clear to the respondents. The total number of indicators and items is 15. Examples from the items: I use social media to keep in touch with my relatives.

Parent-adolescent communication was measured by a five-point scale questionnaire adopted by the researchers from Mehmood and Taswir (2013) and Wanajak (2011). Initially, the instruments were adapted, modified, and checked by an expert in the English language and then translated into Amharic. They modified and translated the questionnaire to make it clear to the respondents. The total number of indicators and items is 10. Examples from the items: I am sometimes afraid to ask my parents for what I want.

In-depth Interview

In-depth interviewing is a data collection technique designed to bring out a colorful picture of the participant's point of view on the research topic. In the present study, the researcher selected 9 teachers (7 male and 2 female) randomly for the interview. The interview session was held for thirty (30) minutes with each interview participant from the sample.

Document Observation

In this study, the researcher collected the semester academic achievement reports of students from the school record office based on their roll numbers that were collected when they filled out the questionnaire. The participants who did not write their roll number when they filled out the questionnaire were not taken from the record office, and automatically, they were excluded from being part of the analysis of the study.

3.8 Data Collection Procedure

The researcher organized the close-ended questions and had them adopted and adapted, then translated them into the Amharic language by subject experts to ensure clarity for the participants. The researcher then obtained an ethical letter from the Psychology Department at Dilla University, allowing them access to the necessary data and documents for the study. Next, the researcher coordinated with school principals to determine when teachers would have class and how to provide participants with free time to complete the questionnaire. Before distributing the questionnaire, participants were provided with a clear objective of the study and received sufficient guidance on how to respond. The participants filled out the questionnaire in the presence of the researcher and their assistants. Ample time was provided for participants to comprehend and complete the questionnaire.

3.9 Data Analysis

In this study, the researcher employed both qualitative and quantitative data analysis techniques. The collected quantitative data were edited, coded, summarized, and analyzed using SPSS software. Different statistical analyses were applied after the data was coded and entered into the computer via SPSS version 20. The quantitative data was analyzed using descriptive and inferential statistics, including linear regression, one sample $t - test$, and an independent $t - test$.

The process of analyzing qualitative data began with coding, classifying, and categorizing the obtained text data from interviewees through note-taking and tape recording into concepts or codes. The qualitative information from the interview was transcribed by the investigator in the local language, Amharic. The transcription was done word-for-word from the audio recordings. Various speech figures or body language expressed by interviewees were taken into consideration during the translation process.

4 Results

4.1 Socio-demographic Characteristics of the Respondents

According to data gathered from 219 participants as shown in Table 1, indicates, the majority (67.1%) of students in the study area are found in late adolescents (16 to 18 years) old. This indicates the majority of students in the study area are found in late adolescence.

Regarding sex, the majority of participants were males which constituted 69.4%,and the remaining 30.6% females. The implication of the above finding the majority of participants were male in the study area.

Table 3: Demographic variables on the effect of social media utilization and parent-adolescent communication on academic achievement of high school students, south Ethiopia (219)

Age	N	%	Sex	N	%	Grade Level	N	%
16-18 (Late adolescence)	147	67.10	Male	67	30.60	Ninth	115	52.50
19-22 (Early adulthood)	51	23.30	Female	152	69.40	Tenth	104	47.50
Above 22 (Middle adulthood)	15	6.80	Total	219	100.00	Total	219	100.00
Below 15 (Early adolescence)	6	2.70						
Total	219	100.00						

n=frequency, %=percentage

4.2 Influence of Social Media Utilization and Parent-Adolescent Communication on Academic Achievement

In Table 5, social media utilization has a statistically significant impact to academic achievements, F (2,216) =.101, p =.034.

Table 4: R Square

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics					Durbin-Watson
					R Square Change	F Change	$df1$	$df2$	$Sig.\ F$-Change	
1	.031^a	.001	-.008	14.227	.001	.101	2	216	.304	2.089

a. Predictors: (Constant), Parent-adolescent communication, social media utilization
b. Dependent Variable: Academic achievement

The above Model Summary Table indicates the power of the regression line to account for total variation in the criterion variable. In that, as can be seen from the above Table the value of R for two predictor variables (*i.e.*, parent-adolescent communication and social media utilization) is; that .101 is, 1.01% of variance in the academic achievement was explained by the combined effect of parent-adolescent communication and social media utilization.

In the Durbin-Watson test, one of the assumptions of regression is that each of the observations is independent. If observations are made over time, successive observations are likely related. If there is no autocorrelation (i.e. where subsequent observations are related), the Durbin-Watson statistics should be between 1.5 and 2.5. Having this assumption in the current study, the Durbin-Watson was 2.089, which was between 1.5 and 2.5, and the data was not auto-correlated.

4.3 Overall Interpretation/Reporting of the Results of Regression Analysis on Academic Achievement

In Summary, step-wise multiple regression analysis was conducted to test if social media utilization and parent-adolescent communication have a statistically significant influence on participants' academic achievement. The result of the regression indicated that social media utilization and parent-adolescent communication were explained (=.001, F (2,216) =.101, p =.304). At the same time, when explaining how students rate social media in terms of their academic lives.

4.4 Overall Interpretation/Reporting of the Results of Regression Analysis on Academic Achievement

Based on table 4, ANOVA analysis was conducted to test if social media utilization and parent-adolescent communication have a statistically significant influence on participants' academic achievement. The result of the regression indicated that social media utilization explained (=.001, F (2,216) =.101, p =.034).

In support of this, one participant of the interview, male and aged 41 from teachers affirmed that, "*Excessive use of social media can lead individuals to lose focus on what is important to them. Concerns have been raised by many school teachers and the general public due to the lack of regulations or guidelines provided by school officials regarding inappropriate use of technology. As high school students, their primary focus should be on their education, and it is not beneficial for their academic life if they prioritize social media or use it in an unbalanced manner. However, I cannot definitively state that it is detrimental to their academic life when used poorly. It may negatively impact their academic life if they utilize social media in a way that is not aligned with their educational goals, such as spending excessive time on non-academic activities like chatting, sharing, and liking posts, rather than seeking out crucial information for their studies*."

However, other participants of the interview, one participant of interview, sex male and aged 34 from teachers stated that, *It is impossible to determine the impact of using social media on academic life, as there are both benefits and drawbacks. On one hand, it provides access to valuable information for academics, social activities, and entertainment. On the other hand, it can be seen negatively as it often distracts students from studying. Therefore, the impact of social media on academic performance depends on the user's experience and intentions. It is important to acknowledge that social media can both present opportunities and challenges. While it offers access to academic information, unintentionally spending excessive time on it can hurtan adolescent's academic life.*

Table 5: One-Sample $t-test$ Summary on Social Media Utilization and Parent-Adolescent Communication

Variables	Mean	Standard deviation	N	r	t	df
Social media utilization	1.90	2.63	219	.046	1.498	-.054
Parent-adolescent communication	2.57	3.50	219	.012	1.736	.393

P* <.05

According to table 4, one sample $t-test$ demonstrated significant difference between the social media utilization and parent adolescent communication among the students. The extent social media utilization and parent adolescent communication among was, 95% CI, social media utilization (M =.1.90, Sd = 2.63), t (219) = 1.498, and parent adolescent communication (M =.2.57, Sd = 3.50), t (219) p =.012,) which implied that there is a statistically significant difference in extent social media utilization and parent adolescent communication among study participants.

In addition to this, one participant of interview, sex female and aged 30 from teachers said that, *The use of social media by students at our school, whether for academic purposes or personal enjoyment, is not overemphasized. Students access social media both through the school's Wi-Fi and their mobile data. Additionally, the interviewees noted that parents stay updated on their children's academic progress and maintain communication with the school. We organize familiar parent days at the beginning and end of the school year, and when necessary, we contact parents to address any current issues that assist us in managing and supporting students at their respective academic levels.*

In contradict to this, one participant of interview, sex male and aged 52 from teachers said that, *Despite the claims of other informants, the entire school community is not effectively utilizing social media for academic information or entertainment due to the absence of a centralized network and inadequate school Wi-Fi. It can be argued that our community lacks social media usage because there are no funds, preventing students from accessing cell data or online connectivity. Furthermore, parent-school communication is deficient. Only a small number of parents attend parent-teacher conferences, and some parents make impersonal phone calls to address their children's issues. Additionally, certain parents choose not to attend these conferences and evade their responsibilities. Consequently, this highlights the poor interactions or orientations between parents and adolescents at home.*

4.5 Gender Differences in terms of Social Media Utilization

Table 6: Independent sample $t - test$ on social media utilization interns of gender

Social media	Male			Female							
Utilization	Mean	Sd.	N	Mean	Sd.	N	95% CI for MD		r	t	Df
	65.73	3,292	152	65.97	3.950	67	.267	.483	.049	1.576	212

P* <.05

Thus, the above finding reveals that there was no statistically significant difference between academic achievement among males and females (M = 65.73, SD =3.292, N = 152; M = 65.97, SD = 3.950, N = 67) at a.05 significant level. This indicates that there were no statistically significant differences between the mean score of academic achievement among male and female participants.

In addition to this, one participant in the interview, a male aged 35 said that, *I don't understand the gender difference in terms of social media usage. It might be determined by an individual's purpose and goals for using social media and their perceptions of its outcomes, but biological sex cannot make a difference in terms of social media usage. Whenever there is an opportunity, there is also a challenge. Having access to information for academic purposes is a major advantage of social media, but unintentionally spending too much time on it is a negative aspect of social media usage and can be seen as an influence on academic life for adolescents.*

In contrast to this, one participant in the interview, sex a male aged 52 from teachers said that, *In my opinion, males tend to use social media more than females because females may often be occupied with helping their mothers in the kitchen and other household tasks. Additionally, males are likely to spend more time outside of their homes, which grants them the freedom to socialize with their peers on social media sites. These factors contribute to gender differences in social media utilization.*

5 Discussion

5.1 The Extent of Social Media Utilization and Parent-Adolescent Communication

The present study suggests that there is a statistically significant difference in the level of social media usage and parent-adolescent communication among the participants. There was minimal variation between the expected and actual values regarding media usage and parent-adolescent communication. Recently, parents have shown a limited understanding of the influence of technology on teenage relationships. However, parents need to comprehend this impact, as it is necessary for fostering a close and loving relationship with their children and for guiding their decision-making and media consumption (Currie, 2014; Toombs, 2014).

5.2 Influence of Social Media Utilization and Parent Adolescents' Communication on Academic Achievements

Academic achievement is statistically influenced by the use of social media and the communication between parents and adolescents. According to

Oche and Aminu's (2016) study, a large number of students experience setbacks due to their excessive focus on social media. The study by Obi, Bulus, Adamu, and Sala'at (2012) supports these findings, showing that students' language and grammar usage is also negatively affected by their use of these websites. Additionally, adolescents can suffer from difficulties in speaking clearly, and messages can significantly hinder their learning abilities (Abaleta, 2014). Internet addiction is a global issue that has resulted in the increased use of social media among students. Other similar studies suggest that individuals who are addicted to the Internet often prioritize using it over fulfilling their personal and professional responsibilities, which ultimately leads to poor academic performance.

Contrary to the findings of the current study, Camilia, Sajoh, and Dalhtu (2013) claimed that they believed social media had a positive effect on their academic performance. Approximately 75% of the students reported using social media for schoolwork, even if it did not have any impact. Additionally, social media can assist students in personal growth, expanding their knowledge and creativity, and developing their technical abilities (Kaplan & Haenlein, 2016). Furthermore, research conducted by Harrath and Alobaidy (2016) suggests that consuming media, when done effectively, can have a positive influence on academic achievement. Establishing open communication between parents and children is significantly and positively associated with the development of moral reasoning, academic performance, and self-esteem in adolescents (Hartos & Power, 2012). However, these findings contradict the study conducted by Brown & Iyengar (2018), which noted that adolescents who lack parental acceptance, behavioral supervision, and psychological autonomy are at a disadvantage because they lack essential skills necessary for academic success.

5.3 Gender Differences in terms of Social Media

The present study suggests that there is no statistically significant difference in social media usage based on gender. Similarly, Lenhart's (2015) study also found that both male and female students equally prefer to engage in online activities. The demographic variable of gender, which reveals distinctions between males and females, influences the frequency of social media usage. Although males show more interest in LinkedIn accounts compared to females, women are more inclined towards personal pages on Facebook (Lenhart *et al.*, 2013). According to the theory of social roles, the dissimilarities between genders can be explained by assigning different social responsibilities to men and women. More specifically, men and women develop diverse skill sets and perspectives based on their behavior in social situations; men tend to be more independent, intellectual, and competitive, while women are more focused on communal aspects.

Contrary to this, earlier research on social media focused on the differences in usage and attitudes between sexes, indicating that women prefer to use social media more than men. A study on internet usage also found that men use the internet more than women, primarily due to privacy concerns. This finding is supported by a study by Cho *et al.* (2019), which showed that older female internet users from individualistic cultures are more concerned about online privacy than males. Similarly, Akyildiz and Argan (2012) found that male students use Facebook more than female students and spend more time on it. Tufekci's (2018) study supported this, showing that women are four to five times more likely to use social networking sites than men. Perrin's (2015) research also found that women in America started using social media slightly more than men. Additionally, a study by Mohammed (2014) in Ethiopia showed a significant difference in the frequency of social media site use between males and females. Similarly, Tham and Ahmed's (2016) study on the usage and implications of social networking sites among secondary school students indicated a significant difference in social media network usage based on gender.

Therefore, even if they use social media and have the habit of studying, they will not be distracted and bothered in their academic lives. On the other hand, Tham and Ahmed (2016) presented that using social media has both negative and positive effects equally. Based on their mixed findings, their suggestion focused on the fact that the key role is with parents to control the balance of the effect.

6 Conclusion

The major findings of the present study obtained from the participants are as follows:

1. The intensity of social media utilization and parent-adolescent communication has a statistically significant influence on academic achievement;
2. There is a significant difference in the extent of social media utilization and parent-adolescent communication among study participants; and
3. There are no statistically significant gender differences in terms of social media utilization among study participants.

This implies that the findings show a significant influence of social media utilization and parent-adolescent communication on the academic achievement of secondary school students. Therefore, stakeholders should take responsibility for addressing the issues arising from the use of technological gadgets by students. Additionally, parents and guardians should aim for positive communication. There should also be collaborative efforts among parents, community members, teachers, school principals, school counselors, and government agencies to address this problem.

The Study's Strengths and Limitations

Firstly, this research is the first of its kind in Ethiopia. However, there are certain limitations to this study. The selection of only one study site was purposeful, and there was a lack of consideration for a diverse range of locations and samples. This may result in a biased response from self-reporting. As a result, the findings of this study cannot be generalized to all secondary school students in the Kembata Tembaro Zone or Ethiopia as a whole.

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Declarations

I, Markos Malimo Setena, hereby declare that the paper entitled "**The Influence of Social Media Utilization and Parent-Adolescent Communication on Secondary School Students' Academic Achievement**" has been entirely undertaken by me.

Ethical Approval and Consent to Participate

All procedures undertaken during data collection involved obtaining a formal letter of permission from the Institute of Education and the Behavioral Science Department of Psychology. Additionally, a formal letter of permission was obtained from the school director. Following this, the purpose of the study was explained, and written informed consent was received from the participants before collecting data. All information was kept confidential.

Availability of Data

The data for this study was available from the corresponding author on reasonable request.

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